PRIDE, PREJUDICE, AND PEJORATIVES AT PEENEMÜNDE:

INTERSERVICE RIVALRY AND TERROR WEAPONS IN THE THIRD REICH

BY

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Errors of fact and deficiencies in my analysis in this work belong to me alone.

ABSTRACT

This thesis discusses terror weapons and interservice rivalry. It describes terrorism, places it in historical perspective, and illustrates that the phenomenon of terrorism that politicians and individual citizens refer to is in fact an act of war covered by the smoke and mirrors of pejorative references and political rhetoric. This is half of the reason for writing. The second purpose is to examine the role of inter-service rivalry for producing technology and innovations. World War II provides the perfect backdrop for examining these phenomena. Hitler's rockets developed at Peenemünde are often referred to as terror weapons and there was substantial inter-service rivalry between the Army and the *Luftwaffe* programs while these weapons were being developed. These two phenomena rarely if ever at all appear alongside one another in security studies literature; their juxtaposition explains why an innovation is considered a terror weapon and provides a useful framework for examining why foreign powers develop new technologies and what a likely US response would be.

This thesis concludes that interservice rivalry was the primary impetus for the *Luftwaffe* to develop the Fi 103 flying bomb, the precursor to the modern cruise missile. A considerable number of different factors reinforced the rivalry between the services: military culture, loss of prestige, and an array of individual personalities that ranged from bumbling sycophants to scientific prodigies to solemn and humble servants of the Fatherland. Motivations to employ the *Luftwaffe's* flying bomb, as well as the Army A-4 rocket, its primary competition, were completely different. A strong sense of nationalism and obedience to country initially provided a strong impetus but were later overcome by more nefarious and insidious aspirations.

The overall lesson is that nothing is ever really what it seems; only through critical inquiry can an objective truth come to the forefront and provide a greater degree of clarity to explain various phenomena in the world.

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Illustrations

Introduction

You can't say civilization don't advance... in every war they kill you in a new way.
- Will Rogers

There are very few regimes throughout history that can compare to the evil of the Nazi party and the Third Reich. Hitler was responsible for the deaths of millions in his attempt to destroy the Jews in his Final Solution; he initiated World War II which was the most destructive war ever fought; and he led a once proud and honorable nation into complete and utter destruction which perpetually changed the landscape of Europe. Had Dante Alighieri written his *Divine Comedy* after WWII, surely he would have secured a place for Hitler next to Brutus and Judas. Not only did Hitler terrorize his own citizens with concentration camps and extreme brutality, but he intended to inflict terror on the British population as well as other European states with his flying bombs and rockets. As noted by esteemed author and historian Stephen Ambrose, rockets and flying bombs were not weapons at all but terrorist devices.[1] To this day the largest death toll from any single event on British soil is still the 131 lives lost when one of Hitler's rockets struck Stepney, England during the war.[2]

Hitler's "terror weapons" were not ordinary by any means; they were technologically advanced and state of the art weapons for the 1940s, the likes of which had never been seen previously in war. The Fi 103, the precursor to the modern cruise missile, was developed by the *Luftwaffe* and would later be known to the world as the infamous V-1. The A-4, a ballistic missile, was developed separately by the Army and would later be known as the V-2. Together, both weapons comprised the *Vergeltungswaffen,* known to the world as the German reprisal weapons. The group responsible for such innovations consisted of notable scientists, some of whom were world renowned for their involvement with rockets during the inter-war period. Of note, Hermann Oberth had previously published a book on rocketry titled *Wege zur Raumschiffahrt.* Years later

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[1] Stephen Ambrose, *D-Day* (New York: Simon and Schuster, 1994), 31.
[2] British House of Commons Home Affairs committee. *Project CONTEST: The government's counter terrorism strategy*. Ninth report of 2008-2009, 13.

another Peenemünde scientist, Wernher von Braun, the program's technical director, would claim fame and glory while leading the US rocket program in the space race with the Soviets during the Cold War. Cloistered on a small island along the Baltic coast, the scientists as well as military officers from the German Army and the *Luftwaffe* produced fantastic weapons of war.

From the outside looking in, the behavior exhibited by Germany would appear to be deliberate acts spurred by rational decisions, referred to as the rational actor model in the parlance of international relations. This is certainly a logical conclusion given that Joseph Goebbels, the Nazi propaganda minister, referred to the rockets and flying bombs as "awe-inspiring murder weapons."[3] However**,** axioms can be deceiving and dogmatically accepting Germany's actions— specifically the launching of rockets and flying bombs—as acts spurred by extreme evil, state terrorism per se, is both unsatisfying and incorrect. Graham Allison offered additional models in his classic book *Essence of Decision* that provide powerful explanations for international affairs. Allison posited that what may appear to be a rational act could in fact be the result of organizational behavior or wrangling for power and influence by internal members. Indeed, what you see is not always what you get—there are always other equally plausible explanations.[4]

For nearly seventy years authors and historians have regarded the rocket attacks as simply the nefarious acts of an evil regime. Determining to what extent those assertions are valid is the purpose of this thesis. This thesis argues that Germany's rocket attacks were the result of intense interservice rivalry between the *Luftwaffe* and the Army and not necessarily the deliberate acts of a totalitarian regime intended to spur terror. First, it asserts that the application of the terror label was done so pejoratively due to the common, and warranted, association of the Third Reich with evil. Second, this thesis asserts that interservice rivalry—well known and documented within the US military—provided a powerful motivator for the *Luftwaffe* to attack England before the *Heer*, the German Army, could do the same. The Army, not wanting to be outdone by a newer and in their eyes, lesser service, initiated its own attacks as a demonstration of service superiority.

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[3] Irving, *The Mare's Nes*t, 138

[4] Graham T. Allison and Philip Zelikow, *Essence of Decision: Explaining the Cuban Missile Crisis*. 2nd ed. (New York: Longman, 1999), 8.

It is very important to note that this thesis does not intend to sympathize with or condone any of the heinous acts committed by the Nazis during World War II. The author condemns the Third Reich's Nazi ideology, racial intolerance, and commission of heinous acts. The author understands that the Holocaust remains a sensitive subject in many circles. While the use of several books by a historian who purportedly sympathizes with Hitler is referenced, the author's use of such literature should not be construed as anti-Semitic nor does it infer that the author is sympathetic towards contemporary neo-Nazi movements. This thesis merely offers an alternative hypothesis for the development of a technological innovation during World War II in order to better understand the mechanisms by which such developments occur.

Relevance for the Contemporary Environment

Consider the official name of the weapons. The name of the rockets in German, *Vergeltungswaffen,* translates into a "reprisal" or "vengeance weapon." The name alone suggests that their intended use was for punishing populations with death and destruction. Populations lived in fear of these weapons because of their unpredictability and devastating effects. Weak or nonexistent defenses against them created a sense of helplessness within the population—a major factor for instilling terror. Thus, a succinct question is, "How can insights gleaned from studying the German actions apply to the contemporary security environment and world writ large?" Many of the issues that confronted leaders during the 1940s also face leaders today.

The current tensions between Iran and Israel seem especially relevant, with the recent successful launch of an Iranian rocket into space and the IAEA's announcement that the Iranians might be close to developing a warhead.[5] Additionally, comments by President Ahmadinijad that Israel should be wiped from the map are examples of rhetoric reminiscent of Hitler and Nazi Germany. [6] If there was a nation that exists today that intends to or may try to drive Israel to its knees, it is most certainly Iran. Yet, Iran is not the only regime that possesses the technology to develop long-range rockets and nuclear weapons. Another leg in the axis of evil, North Korea, also possesses the ability to

[5] National Security Newswire, "IAEA Worried That Iran Might be Pursuing Nuclear Warhead," Nuclear Threat Initiative, 18 February 2010, http://www.globalsecuritynewswire.org/gsn/nw_20100218_7848.php
[6] Nazila Fathi, "Wipe Israel Off the Map Iranian Says," *New York Times,* 26 October 2005, http://www.nytimes.com/2005/10/26/world/africa/26iht-iran.html

launch rockets and has tested a nuclear device. Is it possible that Iranian and North Korean behaviors are the result of internal power struggles or inter-service rivalry?

Important Definitions, Methodology, and Research

Analyzing the development of the Third Reich's "terror weapons" from the perspective that they were not terror weapons but technological innovations naturally requires defining several terms starting with the use of the word *terror*. The use of the word *terror* in this thesis is synonymous with terrorism. Chapter one goes into great depth regarding terror and terrorism and argues that the use of those words is pejorative; thus by extension a terror weapon is also a pejorative term. In the discussion of terrorism, the chapter points out that what the general public typically considers terrorism is actually an act of war. Another term that is very important throughout this thesis and requires defining is interservice rivalry. Interservice rivalry is the continual competition between military services within one nation's military such as that between the US Army and the US Air Force. Chapter two will provide greater depth regarding inter-service rivalries and also illustrate that they have existed for much longer than one may think.

This thesis will first ascertain whether Germany's employment of rockets can be regarded as terrorism. To do so requires an analysis of historical antecedents from both state and non-state actors and subsequently the determination of what constitutes a "terror weapon" will logically follow. Following the analysis of terrorism and terror weapons, the thesis will proceed to "peel back the layers of the onion" and ascertain the underlying causes for interservice rivalries and how they maintain their strength and ferocity. It will then assess how Germany's Prussian heritage influenced inter-service rivalry, and organizational power struggles emerged as dominant forces in the development and employment of the V-1 and V-2 rockets. Analysis will primarily focus on the personalities and character of the key leaders in each organization as well as external influences that may have had an impact on the programs. Assessing the strengths of the internal and external influences will ascertain whether inter-service rivalries were a dominant force in rocket development and employment.

The literature on Terrorism is plentiful since it is the security issue *du jour*. Bruce Hoffman, Gérard Chaliand and Arnaud Blind, and Hugh Gough all provide notable works on terrorism and its history. Of note, the memoirs of Bertrand Barère, the chair of the

Committee of Public Safety during the French Revolution, provide a detailed account of that era in history. Lastly, relevant information is available from many of the US governmental websites such as the Department of State, Department of Defense, and especially the National Counter-Terrorism Center, an organization developed as a result of the 9/11 Commission. Additionally, regarding interservice rivalries, there are numerous books and articles that document past occurrences throughout history. Such books include Thomas Hughes' *Overlord,* Jason Barlow's *Revolt of the Admirals,* and Mark Peattie's *Sunburst*. An abundance of information regarding organizational theory and the reasons for inter-service rivalry also exist. No discussion on inter-service rivalry would be complete without reference to Max Weber, Gareth Morgan, and David Whetten. Such notable organizational theorists have enriched our understanding with a wide range of books and scholarly articles.

The literature on the German military culture, Prussian influence, and V-weapons is rich in content and thick in volume. A number of primary sources exist that provide detailed information about both topics. The Air Force Historical Research Agency at Maxwell Air Force Base and the US National Archives and Record Administration in Washington DC have a plethora of records detailing information on the era. In particular, Sidney Whitman's *Imperial Germany: A critical study of fact and character* written in 1897 captures the essence of 19th century Prussia with an immediacy that many contemporary authors lack. Additionally, the 1945 US Strategic Bombing Survey (USSBS) on the V-Weapons, as well as other USSBS studies of air campaigns during the war will provide an abundance of data and information. A number of excellent secondary sources such as Michael Neufeld's books on the V-weapons and David Irving's *The Mare's Nest* will prove to be essential.

Structure

Chapter 1 flows chronologically with an assessment of past instances of terrorism conducted by the state and non-state actors to determine if any trends exist. Since the overall discussion in the thesis references the German state, the primary focus will be towards state terrorism. This thesis then delves into the controversial subject of determining exactly what terrorism is and why there is so much difficulty in establishing a common framework for defining terrorism. This chapter purposefully defines terrorism

after the historical anecdotes to illustrate there is substantial subjectivity involved in the definitions, and that often terrorism is in the eye of the beholder. Definitions of terrorism are just as numerous and diverse as the historical accounts and provide a backdrop to the chapter's main argument that the contemporary perception of terrorism is merely war on a smaller and more limited scale.

Chapter 2 first demonstrates that inter-service rivalries have existed for centuries, although the evidentiary past is predominantly from the twentieth century when there is much more literature on military history. Following a look at historical examples of inter-service rivalry, the chapter then delves into the issue of perspective and perceptions and their impact, not only within the rivalry but outside as well. The chapter then tackles the issue of why inter-service rivalries exist and how organizational theory helps explain their permanence in military culture. In doing so, it makes a distinction between a "rivalry" and what this chapter refers to as an "inter-service dispute." This chapter argues that changes in the security environment are the catalysts for inter-service disputes. The chapter concludes by illustrating that although rivalries and disputes appear negative and may have strong repercussions there is more than one perception to consider and perceptions from other parties may differ significantly. At the end of the chapter the reasons for the ferocity between the services and why the *Luftwaffe* developed the Fi 103 will become increasingly clear.

Chapter 3 continues to lay the foundational framework for the inter-service rivalry and the development of technological innovations at the Nazi rocket development center at Peenemünde. It first illustrates how Prussian influence shaped the German military culture which provided a sense of deep pride and nationalism in the fatherland as well as a source for latent aggression. The second portion of the chapter discusses the factors that led to the *Luftwaffe's* deterioration and why it was incapable of protecting German cities from the onslaught of Allied airpower. When the German military culture and inability to defend the fatherland are coupled with the fierce inter-service rivalry between the *Luftwaffe* and the German army that was discussed in the previous chapter, the reasons for the development of the Fi 103 and A-4 rockets—the so-called "terror weapons"-- become much clearer.

Chapter 4 provides the narrative to the inter-service rivalry between the Army and the *Luftwaffe.* It proceeds chronologically and discusses the motivations behind the development of the Fi 103, continued struggle for resources, and transition to morale bombing while tying in the concepts discussed in the previous two chapters. The chapter concludes with a technical description and operational assessment of the two weapons. This chapter will illustrate that between the start of the war and the point Germany initiated its barrage of rocket attacks interservice rivalry spurred the *Luftwaffe* to develop the Fi 103, which in turn increased the competition between the two services.

Chapter 5 is the last chapter of the thesis. It first summarizes the main points of each previous chapter to illustrate the broad array of forces that motivated the Army and *Luftwaffe* to develop their technological innovations. It then analyzes the main elements of the thesis's primary argument by assessing the role of interservice rivalry between the *Luftwaffe* and the Army and how it influenced the development of the Fi 103 and A-4. The chapter then discusses German intentions to cause terror.

Chapter 1

Terror and Pejoratives

If inciting people to do that is terrorism, and if killing those who kill our sons is terrorism, then let history be witness that we are terrorists.
- Osama Bin Laden

You can only smash terror with counter-terror.
- Adolf Hitler

Introduction

Geoffrey Brooks in his 2002 book *Hitler's Terror Weapons* argued that Hitler was developing everything from flying saucers to rockets. Brooks categorized them all as terror weapons of the Third Reich-- a part of Hitler's plan for world domination.[1] Brooks is not alone in his use of the word *terror* to describe the innovations developed by German scientists during the war; in fact, numerous authors have labeled the rockets developed at Peenemünde as terror weapons. One such example is Stephen Ambrose who was mentioned in the introduction of this thesis. The term "terror" was not limited to the rockets at Peenemünde; numerous other weapons bore that title as well. Hitler regarded the allied bombing of German cities as terror bombing and considered the Combined Bomber Offensive "allied air terror."[2] Recently, Hans Blix, the chairman of the Weapons of Mass Destruction Commission, issued a report on Chemical, Biological, Radiological, and Nuclear weapons which labeled WMD as "terror weapons."[3] The association of a weapon with the word "terror" has a tendency to make the weapon much more fearful than it actually is.

Given the disparity in time, type, and technological requirements between the V-1 flying bomb and V-2 rocket and WMD (nuclear weapons are technologically advanced,

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[1] Geoffrey Brooks, *Hitler's Terror Weapons: From V-1 to Vimana* (South Yorkshire: Leo Cooper, 2002), 1-3.
[2] Irving, *The Mares Nest*, 243
[3] Dr. Hans Blix, 2006 Weapons of Mass Destruction Commission Report Commission Chairman: Weapons of Terror: Freeing the World of Nuclear, Biological and Chemical Arms

but many chemical and biological weapons only require a home chemistry set or small biological sampling kit) a natural question is, "what is a terror weapon?" Determining what constitutes a terror weapon requires an analysis of terrorism writ large, beginning with a historical assessment of terrorism and then the development of terror weapons. Thus, the real question is, "What is terrorism?" Determining what constitutes terrorism will undoubtedly assist in formulating a useful definition of a terror weapon.

Since time immemorial, terrorism has flourished under disparate and diverse conditions. It transcended race, culture, religion, and geography and appears ubiquitous. In some instances, terrorism was concomitant to war, yet, in others, it was completely separate. As Hannah Arendt poignantly noted, "As a means of frightening people into submission, terror can and does appear in an extraordinary variety of forms."[4] Although there is such a wide disparity between intent, target, method, and perpetrator, the continual presence and persistence of terrorism through time suggests that it is often a successful means to an end. As many in the past have learned, appearances can be deceiving and although it is indeed important to ask what constitutes terrorism, it is equally important to ask the question, "Why is it considered terrorism?" Thus, determining what terrorism is and why it constitutes terrorism versus a crime or some other act will illuminate answers to the original question regarding terror weapons.

This chapter flows chronologically with an assessment of past instances of terrorism. It primarily focuses on state terrorism but does not discount the role of the non-state actor on the world stage. It then assesses several historical examples of terror weapons and ascertains whether there are any trends relevant to the discussion of terror. After assessing various historical accounts of terrorism, this thesis delves into the controversial topic of defining terrorism. This chapter purposefully defines terrorism *after* the historical anecdotes to illustrate there is substantial subjectivity involved in the definitions and that often terrorism is in the eye of the beholder. Definitions of terrorism are just as numerous and diverse as the historical accounts and provide a backdrop to the chapter's main argument that the contemporary perception of terrorism is merely war on

[4] Bret Bowden and Michael T. Davis, *Terror: From Tyrannicide to Terrorism* (Queensland: University of Queensland Press, 2008), 1.

a smaller and more limited scale and that that the terrorism label is often applied pejoratively.

The History of Terrorism

To westerners, and perhaps a majority of the world, Al Qaeda is probably the most recognizable—at least by name—terrorist organization that exists today. Al Qaeda is merely a reflection of the past as terror organizations have existed for millennia. One of the earliest known organizations that exhibited aspects of modern terrorism was the Zealots of Judea. Written accounts of their exploits exist in Flavius Josephus's *Jewish Antiquities* and *Jewish War* published as early as 93-94 C.E. and 75-79 C.E.[5] "Taking up terror as an instrument," the Zealots sought to wrest their independence from Rome in the land of Judea during the first century.[6] Primarily motivated by their notion they could not remain faithful to the Judea dictates while under Roman rule, they conducted an assassination campaign against Roman occupation forces and their Jewish collaborators. Known to the Romans as Sicarii, or dagger-men, they successfully carried out many assassinations. Eventually, the Romans encircled them in the year 70 C.E. at the fortification of Masada and instead of falling into the hands of the Romans; the Zealots chose to commit suicide. Having never accomplished their primary objective of Roman expulsion, their revolt simultaneously ended with their lives.

Flourishing during the eleventh and twelfth centuries in the Middle East, the Assassins, a secessionist faction of Shia Islam, were another group that foreshadowed contemporary terrorist organizations. Primarily motivated by the ideology that an illegitimate Sunni government was in control, the Assassins also adopted assassination as their primary tactic against their enemies. According to Gérard Chaliand and Arnaud Blin they were unrivalled in their techniques. Not only did the Assassins execute attacks against their own government but also tried to repel a foreign power—namely Christian crusaders trying to reclaim the holy land. Although many of their assassinations were successful, like the Zealots, they did not lead to their control of the government or the expulsion of Christian Crusaders from the West.[7] More concerned with the Christian

[5] Gérard Chaliand and Arnaud Blind, "Assassins and Zealots" *The History of Terrorism from Antiquity to Al Qaeda* (Los Angeles, University of California Press, 2007), 55.
[6] Chaliand and Blind, "Assassins and Zealots," 57.
[7] Chaliand and Blind, "Assassins and Zealots," 72.

threat in the West, it was from the East where the Assassins met their demise. During the thirteenth century, the Mongol incursion into the Muslim world was beginning of the end for the Assassins.[8]

Instead of waging open warfare against their enemies in the conventional sense, the Zealots and Assassins resorted to an asymmetric strategy of assassination commonly referred to as a decapitation strategy. Such a strategy relies on the notion that assassinating an enemy leader will facilitate an organization's ability to achieve its objectives. According to coercion theorist Dr. Robert Pape, "the main assumption is that these targets are a modern state's Achilles' heel. Regardless of the strength of a state's fielded forces or military-industrial capacity, if the leadership is knocked out, the whole house of cards comes down."[9] Contemporary terrorist organizations also have adopted a similar strategy to that of the Assassins and Zealots. Throughout the twentieth and beginning of the twenty-first century, terrorist organizations have targeted and assassinated a fairly large number of world leaders and dignitaries. In 1914 a young member of the Black Hand, a Serbian organization intent on a pan-Slavic society, attacked the Archduke and his wife in Sarajevo. The deaths of Archduke Franz Ferdinand and his wife Sophie set off a chain of events culminating in WWI and the demise of the Ottoman and Austro-Hungarian Empires. More recently in December 2007 Benazir Bhutto, a politician that chaired the Pakistan People's Party, was assassinated when leaving a rally. According to Pape, decapitation strikes are not likely to produce decisive results and the death of a leader commonly brings less change in policy than expected.[10] Even though the Zealots, Assassins, and many other contemporary terror organizations did not achieve their stated objectives even they were still able to instill fear in their adversary.

Contemporary terror organizations do not rely on decapitation strikes as their sole means for obtaining their objectives. Events such as the 25 December 2009 attempt by a

[8] Chaliand and Blind, "Assassins and Zealots," 70 – 75.
[9] Robert A. Pape, *Bombing to Win: Air Power and Coercion in War*, (Ithaca, NY: Cornell University Press, 1996), 79.
[10] Pape, *Bombing to Win*, 80.

Nigerian national with Al Qaeda links to destroy a US jetliner illustrate this.[11] Pape chronicles the annals of suicide terrorism in his book *Dying to Win*, illustrating yet another means. In fact, there are numerous means that terrorists use to achieve their objectives. The point is that each terror organization ties a different means to a different objective and that none of the groups use terror for terror's sake.

State Terrorism

State terrorism, the notion that the polity could commit acts of terror to achieve its ends, predates the 1648 Treaty of Westphalia even though it is widely accepted as the point that denoted the beginning of the modern nation state. Because non-state actors commit a preponderance of terrorist activity today, there may be a strong propensity to think that they are the sole proprietors of terror campaigns; however, Chaliand and Blin observed that states have always been the largest perpetrators of terror through the ages.[12] With access to a wide range of resources, the polity could commit acts of terror on a far greater scale than any sub-national organizations or non-state actors. Furthermore, with a large population consisting of well-educated individuals, states are far more likely to produce technologically advanced weaponry then non-state actors. With such access to vast resources, funding, and personnel, the only limit to the type or extent of terror is the imagination.

One of the earliest known examples of state terrorism occurred in what is now modern day China. In 518 BC during a battle between the Chinese armies of Wu and Ch'u, the Viscount of Wu ordered three thousand condemned men to line up in front of his formation. In full sight of the opposing army, the condemned men committed suicide by cutting their own throats. The Ch'u army was so terrorized that it fled in fear.[13]

As a succinct representation of Sun Tzu's dictum, "to win one hundred victories in one hundred battles is not the acme of skill… [subduing] the enemy without fighting is the acme of skill," the battle is indicative of the asymmetric ability of terrorism to

[11] Barack Obama, Weekly address of the President of the United States, 2 January 2010. See complete address at http://www.whitehouse.gov/the-press-office/weekly-address-president-obama-outlines-steps-taken-protect-safety-and-security-ame

[12] Gérard Chaliand and Arnaud Blin, *The History of Terrorism*, 6.

[13] Sun Tzu. *The Illustrated Art of War.* Translated by Samuel B. Griffith (Oxford: Oxford University Press US, 2005), 55.

produce fear.[14] Many contemporary terrorist organizations gravitate to terrorism's asymmetric nature simply because they do not have the manpower or numbers of weapons to match the state. The two Chinese armies from the anecdote were probably equals in strength and weaponry, and neither of them would have had a distinct technological advantage. The victory was the result of the Wu army's ability to produce an irrational fear in its opponents. Through fear, i.e. terror, the army achieved its objectives.

Almost two thousand years later a notorious fifteenth century monarch committed atrocities we might regard as terror. Vlad Tepes III ruled Wallachia (located in modern-day Romania) between 1431 and 1476 and committed some of the most heinous acts to other humans ever documented. As a deterrent to invading armies, Tepes impaled on stakes both captured enemies as well as his own people, strategically placing them in locations visible to potential invaders. In 1462, Tepes successfully deterred Sultan Mohammed II from invading Wallachia. After the Sultan's army viewed the grisly signposts along the invasion route, the Sultan supposedly said that he was unable to conquer a man capable of such atrocity.[15]

But why are the meeting between the Wu and Ch'u armies and the atrocities of Vlad Tepes considered terrorism? Many books on the history of terrorism do not include the preceding accounts. The most likely reason for the omission of the engagement between the Wu and Ch'u armies is that it involved the clash of armies—more often related to war than with terrorism, even though there is hardly a distinction. Furthermore, there is not a significant amount of data on the incident since it occurred so long ago. In fact, Sun Tzu is more often associated with strategy then he is with terrorism. Vlad Tepes, on the other hand, romanticized in Bram Stoker's fictional story as the bloodthirsty Count Dracula, is known more through myth and legend than through historical scholarship. Hence, authors would most likely exclude these incidents on the grounds they might reduce the gravitas of their work.

Just like the Zealots and Assassins, the Viscount of Wu and Tepes used "terror as an instrument" to instill irrational fear in their adversaries. The notion that an organization

[14] Sun Tzu, *The Art of War*, 115.
[15] Adrian Axinte, "DRACULA: Between Myth and Reality," Stanford University Romanian Student Association, http://stanford.edu/group/rsa/_content/_public/_htm/dracula.shtml.

can exploit irrational fear is often part of many terrorism definitions but is also a key factor in deterrence. Typically, deterrence revolves around nuclear weapons and not around impaling prisoners; however, the theoretical framework is the same. Deterrence relies on the notion that the other side possesses the capability to inflict such extreme suffering that the benefits of aggression will never outweigh the costs. Thomas Schelling, the famed strategist and economist, remarked that pain and suffering are contingent upon the adversary's behavior—the threat of violence could be an extremely powerful motivator for *not* acting.[16] Therefore, do all governments possessing nuclear weapons commit terrorism on a daily basis? Many in the world would argue this point.

Terror inflicted on a state's own people is not rare in history; however, terror inflicted on a state's own people—especially by impalement—intended to deter foreign aggression is. Although the Ottomans were his sworn enemies, there is reason to believe that Tepes did not deliberately intend his heinous acts as a deterrent to invading Ottoman armies. Romanian scholars agree that Tepes enjoyed having people impaled, and that much of this gruesome activity was for personal amusement.[17] Unaware that he was demonstrating, in the modern sense of deterrence, both capability and resolve, perhaps Tepes' acts were so horrific that they indirectly provided a strategic deterrent for Wallachia. Thus, acts of terror intended for Tepes' amusement were perceived differently, albeit rationally, by an external actor.

One of the most well known instances of terror inflicted on a state's own people was during the French Revolution—aptly named "the terror" or "reign of terror" by many historians. Historian Hugh Gough observed that governmental use of terror and violence was common prior to the revolution, but its use by a secular, democratic, and constitutional regime was something new in history.[18] After toppling Louis XVI, the recently established government wielded terror to intimidate counter-revolutionaries, subversives, and anyone regarded as an "enemy of the people" who threatened the new government's existence.[19] The Committee of Public Safety sent forty thousand people to

[16] Thomas C. Schelling, *Arms and Influence* (New Haven, CT: Yale University Press, 1966), 3.
[17] Radu Florescu and Raymond T. McNally, *Dracula: Prince of many faces* (London: Little, Brown, and Company, 1989),
[18] Hugh Gough, *Terror: From Tyrannicide to Terrorism*, Edited by Bret Bowden and Michael T. Davis (Queensland: University of Queensland Press, 2008), 77.
[19] Bruce Hoffman, *Inside Terrorism* (New York: Columbia University Press, 2006), 3.

the guillotine; though the committee regarded the victims as enemies of the people, many were simply innocent bystanders falsely accused by others in order to settle old scores.[20]

Maximilien Robespierre, the revolution's leader, believed that the state must combine virtue and terror for the new democracy to triumph.[21] Robespierre proclaimed "terror is nothing but justice, prompt, severe and inflexible; it is therefore an emanation of virtue."[22] According to Robespierre, a democracy must use everything within its power to preserve itself, even if it must resort to terrorizing and executing thousands of its own people. Essentially the French government tried to purge itself of those who could overthrow or endanger the new republic; however they missed one. In 1799, following a coup d'état, a young artilleryman named Napoleon Bonaparte pronounced himself as the emperor and initiated a European war that claimed far more lives than the guillotine.

Another episode of state terror occurred in the Soviet Union during the twentieth century. Although the Soviet Union did not exemplify democracy in any manner, Joseph Stalin possessed thoughts similar to Robespierre's when he purged a large majority of the military and other elites within the Soviet population between 1934 and 1938. By most accounts, Stalin's personal desire for power resulted in at least a million people executed with millions more arrested who later died in the gulags and work camps throughout the Soviet Union.[23] Although the greatest amount of deaths occurred between 1937 and 1938, the Soviet purges of society did not stop until Stalin's death and took place over the course of almost four decades. Robert Conquest, the foremost expert on Stalinism and Sovietology, wrote that the purges, known as "the great terror," were predicated primarily on Stalin's personal and political motives and not necessarily his desire to preserve the Soviet Union.[24] In *Inside Terrorism*, Bruce Hoffman noted that Stalin's purges were simply a "conspiracy to seize total power by terrorist action."[25]

The notion that states will preserve their sovereignty and leaders will retain control through whatever means possible existed well before the French Revolution and Stalin's Purges. The acts committed by the French revolutionaries and Stalin appear similar to

[20] Hoffman, *Inside Terrorism*, 3.

[21] Hoffman, *Inside Terrorism*, 3.
[22] Hoffman, *Inside Terrorism*, 3.
[23] Robert Conquest, *The Great Terror: A Reassessment* (Oxford: Oxford University Press, 1990),485-487.
[24] Conquest, *The Great Terror: A Reassessment*, 53.
[25] Hoffman, *Inside Terrorism*, 15.

those advocated by Niccollo Machiavelli in his 1523 treatise, *The Prince.* Machiavelli wrote that actions to protect the state are completely justified even if they are cruel.[26] Therefore, when the goal is the preservation of the polity or sovereignty of the state, the ends will certainly justify the means.[27] Whether the French and Soviet actions were purely Machiavellian is debatable, but what is clear is that the deliberate attempts to ensure the survival of the fledgling democracy and to retain Stalin's grip on power resulted in the deaths of millions—according to the French government and Stalin, merely a small price to pay for their survival.

However, questions remain. Why are these events regarded as terrorism, and why are other mass purges not considered terrorism? Numerous books document these eras as state or *top-down terrorism*, but if the French Revolution and Soviet purges constituted terrorism, then an obvious conclusion is that *all* state purges constitute terrorism. Few suggest that the great purges in China orchestrated by Mao Zedong between 1967 and 1969 constituted state terrorism even though Mao was responsible for the deaths and torture of millions.[28] Instead, the period is referred to as the "Cultural Revolution." In this sense, the terrorism label is not strong enough and the term "genocide" is more appropriate. Ironically, the deaths of millions during the Cultural Revolution is not regarded as genocide since Stalin successfully had deaths attributable to political motives removed from the United Nations definition in 1948.[29] It is difficult to fathom that the purges in the Soviet Union can be terrorism but not genocide.

Was the French and Soviet government's use of terror deliberate? In his 1825 memoirs, Bertrand Barère, the chair of the Committee of Public Safety during the period, lamented that M. de Calonne and the author Marat were bloodthirsty. Barère remarked that Calonne, a French noble seeking refuge in England during the revolution and the reign of terror, directed Marat to pen the *L' Ami du People,* an ultra-revolutionary article circulated in Paris.[30] According to Barère, when Calonne was referring to the high quality of writing by Marat, he stated, "Ah, the notables want revolutions; I will make

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[26] Niccolo Machiavelli, *The Prince and the Discourses* (New York: Modern Library, 1950), 63.
[27] Niccolo Machiavelli. *The Prince.*
[28] Roderick Macfarquar and Michael Schoenals, *Mao's Last Revolution* (Boston: Harvard University Press, 2006), 257.
[29] Robert Gellately & Ben Kiernan, *The Specter of Genocide: Mass Murder in Historical Perspective* (Cambridge: Cambridge University Press, 2003), 267.
[30] Bertrand Barère, *Memoirs of Bertrand Barère* (London: H.S. Nichols, 1896), 266.

some for them."[31] Marat's insurrectionist writings urged the people to murder the aristocrats and "get rid of the more enlightened population."[32] Clearly, Calonne had an axe to grind and Marat was his instrument; however, neither were members of the Committee of Public Safety at the time. Whether the government deliberately intended to terrorize its population or not is now more difficult to determine in light of Barère's memoirs.

According to Edmund Burke in his 1790 *Reflections on the Revolution in France,* the French population during that period consisted of approximately twenty-two million people.[33] Even without the benefit of a modern census, his numbers would have been relatively accurate. Given that mass communications did not exist at the time, it is difficult to comprehend how such a small council—the committee of public safety only consisted of nine and then later twelve members—can instill irrational fear in a population recently freed from the ruling aristocracy. On the other hand, was it possible that the population lived in fear because they never knew if they might be the next one to face the guillotine? The difference between intent and reception is subtle but significant. Given the hysteria during that era, perhaps the French population cascaded fear by continually increasing the numbers of those who faced the guillotine out of sheer paranoia. That is not to say that the French population was to blame, but if an individual didn't know if he will be next to face the guillotine, the chances that he will accuse an innocent person to save himself exists. Stalin's motivations are more personal than preserving the sanctity of the Soviet Union, yet the Soviet purges appear to have a similar theme to that of the French Revolution.

When viewing an act of terror there is an automatic assumption that the act or behavior was the result of a rational decision. Simply stated, the state or individuals intended to cause or inflict terror on another entity in order to achieve some goal or political end. The French Revolution illustrated terror by a group of individuals where as the Soviet Purges illustrated terror by one individual. Even the example of Vlad Tepes, the notorious Count Dracula, illustrated that terror could be construed as a deterrent to

[31] Bertrand Barère, *Memoirs of Bertrand Barère* (London: H.S. Nichols, 1896), 266.
[32] Barère, *Memoirs of Bertrand Barère*, 267.
[33] Edmund Burke, *Reflections on the Revolution in France and on the Proceedings in Certain societies in London* (London: J. Dodsley in Pall Mall, 1792), 190.

another army. However, as Tepes' impalements, the French Revolution, and the purge examples pointed out there are other explanations that are equally rational and terror is not always intended. Albeit macabre, Tepes may have enjoyed having individuals impaled and the "terror" incited during the French Revolution could have been the result of deposed individuals who formerly held positions in government or simply that people were scared. Lastly, Stalin was not altruistic in any way but did he really intend to terrorize individuals or was it simply a secondary result of the purges? The overall point is that intentions and perspectives regarding terror are extremely subjective and appearances can be deceiving.

Terror Weapons

Just like terrorism, terror weapons possess a rich history of creating panic and instilling fear in an adversary. As early as the fifth century BC, the Athenian historian Thucydides documented the Syracusans' use of warships during the Peloponnesian Wars to "cause a terror to the enemy, the advantages of which would far out-weigh any loss…"[34] However, seeing a weapon and feeling its effects are very different. During the middle ages, the Trebuchet and Ballista were popular siege weapons that instilled fear in an adversary population because of their destructive capability. Henry of Livonia provided the following excerpt in his *Chronicle of Livonia* as he described the weapon and its effect on the adversary during the siege of Mesoten by Teutonic Crusaders in December 1219:

> At last, the larger machine was put up and great rocks were cast at the fort. The men in the fort, seeing the size of the rocks conceived a great terror. The duke took charge of the machine, shot the first stone, and crushed the enemy's balcony and the men in it. He shot a second one and dislodged the planks and the logs of the rampart. He discharged a third one and pierced and shattered three large logs in the rampart and struck some men. After seeing this, the people in the fort fled from the ramparts and sought safer places. But since they had no refuge, they asked for quarter so that they could come down and make their plea to the bishop.[35]

[34] Landmark Thucydides, page 440. The Athenians were widely known for their sea-faring capabilities. The sight of an Athenian vessel struck fear into their adversaries. The Syracusans were attempting the same tactic and assumed that any state that was so bold as to directly sail towards an Athenian vessel would strike fear in the Athenians when they viewed such a daring deed.

[35] Tanel Saimre, "Trebuchet-A Gravity Operated Siege Machine," *Estonian Journal of Archaeology*, 2006, 77.

The notion of *jus in bello* (just conduct of war) hardly mattered and there was little hesitation to use whatever means at a ruler's disposal if it provided him with what he aimed to conquer.[36] Although the church outlawed such weapons as the trebuchet and crossbow at the Second Lateran Council of 1139 for being too inhumane for use by Christians against fellow Christians, there was hardly any acceptance of the church's decree and the weapons proliferated.[37] The Lateran Council is similar to the modern day conventions on chemical and biological weapons that intend to prevent the use of such weapons on the battlefield because they are so horrific, yet there are plenty of nations that would use their arsenals, despite having ratified the conventions, if they felt threatened.

The Germans, no strangers to new and advanced weapons, possessed a rich history of developing weapons with extreme shock value dating back to World War I. The *Kaiser Wilhelm Geschutz*—commonly known as the Paris Gun—lobbed shells at Paris between March and August of 1918; however, it was not strategically effective and caused only small amounts of damage in Paris.[38] One of the Paris Gun's developers was a young artilleryman, Walter Dornberger, who would later attempt to surpass this accomplishment by assisting in the development of the A-4 rocket. At the tactical level, the Germans introduced chlorine gas for the very first time at the Battle of Ypres. A slave to the wind, the unpredictable gas offered a minimal tactical advantage and often drifted back into German trenches—a phenomenon Hitler personally experienced.[39] Although these weapons were not decisive in war, both civilians and military alike feared them because of their novelty and unpredictability.

Although it is often believed that the Germans were the only ones to commit acts in the name of terror during WWII, the allies have also been repeatedly accused of using their bombers as terror weapons. Although the allies dropped thousands of tons of bombs in Europe and in the Pacific, two bombings stand out from the rest as the most

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[36] According to Michael Waltzer, jus in bello refers to the conduct of a war and whether or not it is being fought justly or unjustly.
[37] Gary D. Solis, *The Law of Armed Conflict: International Humanitarian Law in War* (Cambridge England: Cambridge University Press, 2009), 5. Under Innocent II, use of the crossbow was forbidden as "deadly and odious to God" by the Catholic Second Lateran Council in 1139.
[38] Priscilla Mary Roberts, *World War I* (Santa Barbara: ABC-CLIO, 2006),1405.
[39] David Jablonsky, *Churchill and Hitler: Essays on the Political-Military Direction of Total War* (Essex: Frank Cass, 1994), 274.

catastrophic. In Europe, it was the February 1945 bombing of the German cultural center of Dresden. Air Chief Marshal Sir Arthur Harris, the commander of RAF Bomber Command, clearly intended to terrify the Germans in an attempt to destroy their morale: "Our adversaries called it terror bombing, which it was; we were indeed trying to terrify the German population."[40] The devastation from the two atomic weapons dropped on Hiroshima and Nagasaki in August 1945 eclipsed the destruction caused in Europe. Illustrating the effect of the atomic bomb on the Japanese population, the United States Strategic Bombing Survey (USSBS) documented that the primary reaction of the populace to the bomb was fear and uncontrolled terror, exacerbated by the sheer horror of the destruction and suffering witnessed and experienced by the survivors.[41]

There is considerable rhetoric associated with terror weapons, often making them much more menacing then they actually are, with the exception of nuclear weapons. As noted above, many consider weapons of mass destruction to be terror weapons. Aside from nuclear weapons, which can obliterate an entire nation through the detonation of a million tons of TNT, chemical, biological, and radiological weapons are nowhere near as destructive. In certain quantities and doses, some chemical agents are not even lethal and in fact, governments used various types for testing on humans during WWII. Between 1942 and 1945, the Australian government exposed roughly 1,000 Australian soldiers to Mustard Gas in order to calculate the degradation to a soldier's performance in combat under CBRN conditions. Although each soldier's performance degraded considerably by the many blisters each incurred from the Mustard Gas, there was not a single loss of life.[42]

WMD incidents can cause pain and suffering which the 1995 Tokyo Subway and 2001 Anthrax letters demonstrated, but their effects were minimal compared to conventional explosives. Terror weapons are effective at creating fear within a population initially but they begin to lose their effectiveness once they are unleashed because people grow accustomed to them and know what to expect. Londoner James

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[40] Henry Probert, *Bomber Harris: His Life and Times* (London: Greenhill Books, 2001), 339.
[41] C.R. Williams, *United States Strategic Bombing Survey—Report on the "CROSSBOW" Campaign: The Air Offensive Against V-Weapons, EW #60 (24 September 1945).* Washington, D.C.: U.S. Government Printing Office, 1945, 103.
[42] *The Gillis Report: Australian Field Trials with Mustard Gas 1942-1945*, Australian National University, 1985.

Lees-Milne recounted the horror of the V-weapons in his book *Prophesying Peace* and remembered rhetorically asking during an attack one evening, "For sheer damnable devilry what could be worse than this awful instrument?"[43] However, Milne changed his opinion once the Londoners learned that the rockets possessed a relatively small payload and that someone would die only if they were so unlucky as to be standing at the point of impact. According to Lees-Milne, after the Germans continued firing rockets and the people grew accustomed to their daily occurrence, the sirens became more of a nuisance and got on one's nerves more than the flying bombs.[44]

Defining Terrorism

Bruce Hoffman observed that over the past two hundred years, the definition of terrorism has changed significantly from its first use and, unlike today, it actually had a positive connotation.[45] Although terrorism is viewed as decidedly negative today, few academics can agree on an exact definition. One 1988 study counted 109 different definitions of terrorism.[46] Another, conducted by terrorism expert Walter Laqueur a decade later, reconfirmed the existence of over 100 different definitions.[47] Laqueur concluded that the only characteristic generally agreed upon was that terrorism involves violence and the threat of violence.[48] Nascent terms such as cyber-terrorism that have a distinct lack of what might normally be considered violence, muddles definitions of terrorism even more.

The late Supreme Court Justice Potter Stewart said in 1973, "I shall not today attempt further to define pornography; and perhaps I could never succeed in intelligibly doing so. But I know it when I see it…."[49] Perhaps terrorism is similar; one cannot define it but he knows it when he sees it. However, unlike with pornography, governments have initiated major military operations and spent billions of dollars when it felt state security was at risk. Walter Laqueur, a noted scholar of terrorism, contends that a comprehensive

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[43] James Lees Milne, *Prophesying Peace* (London: Chatto and Windus, 1977), 80.
[44] Milne, *Prophesying Peace*, 93.
[45] Hoffman, *Inside Terrorism*, 3.
[46] Alex P. Schmid, Albert J. Jongman, *Political Terrorism: A New Guide to Actors, Authors, Concepts, Data Bases, Theories, and Literature* (New Brunswick, NJ: Transaction Books, 1988), 6.
[47] Walter Laqueur, *The New Terrorism: Fanaticism and the Arms of Mass Destruction* (New York: Oxford University Press, 1999), 6.
[48] Laqueur, *The New Terrorism*, 6.
[49] Text of *Miller v. California*, vol. 413 U.S. Supreme Court (1973).

definition of terrorism will not appear in the near future.[50] According to Laqueur, "even if there were an objective, value-free definition of terrorism, covering all its important aspects and features, it would still be rejected by some for ideological reasons."[51] Now that over 5000 Americans have lost their lives in military operations in the "war on terror" since 9/11, defining terrorism requires a concerted effort.

Academics are not the only ones to disagree on the definition. In fact, many US government agencies have their own distinct definition of terrorism. The table below depicts different definitions by the Department of Defense (DOD), National Counter-Terrorism Center (NCTC), and Federal Bureau of Investigations (FBI):

Governmental Agency	Definition
Department of Defense	The calculated use of unlawful violence or threat of unlawful violence to inculcate fear; intended to coerce or to intimidate governments or societies in the pursuit of goals that are generally political, religious, or ideological.[52]
National Counter-Terrorism Center	Premeditated, politically motivated violence perpetrated against non-combatant targets by sub-national groups or clandestine agents [53]
Federal Bureau of Investigations	The unlawful use of force or violence against persons or property to intimidate or coerce a Government, the civilian population, or any segment thereof, in furtherance of political or social objectives. The FBI further describes terrorism as either domestic or international, depending on the origin, base, and objectives of the terrorist organization.[54]

Figure 1: Selected US Governmental Agency Terrorism Definitions
Source: US Department of Defense Joint Publication 1-02, US National Counter-Terrorism Center website www.nctc.gov, and US Federal Bureau of Investigations website www.fbi.gov.

Each definition is slightly different and emphasizes different aspects. DoD emphasizes that the acts are unlawful alluding to the notion that US involvement on foreign soil are indeed lawful. If, according to Ken Waltz, the world is anarchic, then who determines if an act is lawful or unlawful?[55] It is certainly not the United Nations as US invaded Iraq without UN *permission*. A state must determine whether its actions are lawful or not. Thus, according to the DoD definition, all members of the US armed forces are not

[50] Laqueur, *The Age of Terrorism*, 149.
[51] Laqueur, *The Age of Terrorism*, 149.
[52] Department of Defense Dictionary of Military and Associated Terms, 19August 2009, 550.
[53] 2008 National Counter-Terrorism Center Report on Terrorism, 30 April 2009, 1.
[54] 2008 FBI Counter Terrorism Report. http://www.fbi.gov/publications.htm
[55] Kenneth Waltz, *Theory of International Politics* (Boston: McGraw Hill, 1979).

conducting terrorism to achieve US goals and objectives in Iraq and Afghanistan because US acts are lawful to the US. Interestingly, the definition would be significantly different if the word *illegitimate* replaced *unlawful*. Then the perception of other states would matter more and the determination would not be left to the state alone. Other differences convolute the definition even more. For instance, a gang of teenagers fits the FBIs definition and a US soldier in either Iraq or Afghanistan falls within the purview of the DOD definition.

The National Counterterrorism Center (NCTC) explicitly states that terrorism only involves acts committed against civilians and non-combatants. As a product of the 9/11 investigations, the NCTC serves as the primary organization in the Government for integrating and analyzing all intelligence pertaining to counterterrorism even though their definition is different from that used by many other agencies. Ostensibly, a governmental agency could identify what the NCTC defines as an act of terrorism; however, if it does not fit its own definition, it may not report it. Even though the NCTC uses the definition listed above, there is still a significant amount of subjectivity. According to the NCTC website, "determination of what constitutes a terrorist act can be more art than science."[56] In the same sense as the pornography analogy, the NCTC knows what terrorism is when they see it. Because of their subjectivity any incident that *smells like* terrorism must be. With their subjectivity, the NCTC paradoxically hampers their counter terrorism efforts because anything can be considered terrorism whether there is any evidence to substantiate the claim.

An entry in the NCTCs database, Worldwide Incidents Tracking System (WITS), provides an example of their subjectivity. The NCTC claims that the data provided in WITS consists of incidents in which "sub-national or clandestine groups or individuals deliberately or recklessly attacked civilians or noncombatants."[57] However the following 2009 WITS entry regarding an incident in Arkansas illustrates otherwise:

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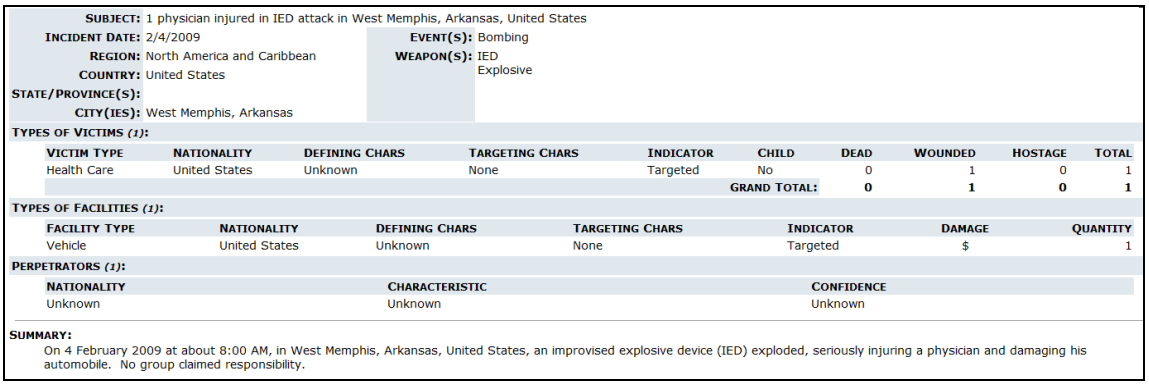
[56] Determination of what constitutes a terrorist act, however, can be more art than science; information is often incomplete, fact patterns may be open to interpretation, and perpetrators' intent is rarely clear. Moreover, information may become available over time, changing initial judgments about attacks. Users of this database should therefore recognize that reasonable people may differ on whether a particular attack actually constitutes terrorism or some other form of political violence. For more information regarding the National Counter-Terrorism Center visit: http://wits.nctc.gov/Methodology.do

[57] National Counter-Terrorism Center World Wide Incident Tracking System, http://wits.nctc.gov/Methodology.do



SUBJECT: 1 physician injured in IED attack in West Memphis, Arkansas, United States
INCIDENT DATE: 2/4/2009
REGION: North America and Caribbean
COUNTRY: United States
STATE/PROVINCE(S):
CITY(IES): West Memphis, Arkansas
EVENT(S): Bombing
WEAPON(S): IED
Explosive

TYPES OF VICTIMS (1):

VICTIM TYPE	NATIONALITY	DEFINING CHARS	TARGETING CHARS	INDICATOR	CHILD	DEAD	WOUNDED	HOSTAGE	TOTAL
Health Care	United States	Unknown	None	Targeted	No	0	1	0	1
					GRAND TOTAL:	0	1	0	1

TYPES OF FACILITIES (1):

FACILITY TYPE	NATIONALITY	DEFINING CHARS	TARGETING CHARS	INDICATOR	DAMAGE	QUANTITY
Vehicle	United States	Unknown	None	Targeted	$	1

PERPETRATORS (1):

NATIONALITY	CHARACTERISTIC	CONFIDENCE
Unknown	Unknown	Unknown

SUMMARY:
On 4 February 2009 at about 8:00 AM, in West Memphis, Arkansas, United States, an improvised explosive device (IED) exploded, seriously injuring a physician and damaging his automobile. No group claimed responsibility.

Figure 2: Terrorism Incident 2 April 2009
Source: National Counter Terrorism Center Worldwide Incident Tracker

Even though the perpetrators and motivations are unknown, the NCTC included the entry instead of seeking more information.

The subjectivity of the term offers a great deal of insight on the terror label but still does not define terrorism. To derive a useful definition of terrorism requires an analysis of its components. The most prevalent terms in all of the known definitions include the following: violence, pre-meditation, political motivations, objective oriented, targeted at non-combatants or civilians, and lastly that terrorism is the propriety of non-state actors.[58] Thus, a general definition for terrorism derived of the most prevalent terms: premeditated and deliberate use of violence against civilians or non-combatants by non-state actors in order to achieve a political objective.

This thesis rejects the generally accepted academic definition of terrorism because there is far too much political rhetoric associated with contemporary definitions of terrorism. Sami Zeidan, a Lebanese diplomat and scholar, wrote in the Cornell Law Review that political reasons are the impetus for a lack of consensus on a definition. Zeidan explained as follows: "The difficulty of defining terrorism lies in the risk it entails of taking positions. The political value of the term currently prevails over its legal one. Left to its political meaning, terrorism easily falls prey to change that suits the interests of particular states at particular times."[59] According to Zeidan, the term terrorism is simply a rhetorical device.

[58] Hoffman, *Inside Terrorism*, 23.
[59] Sami Zeidan, "Desperately Seeking Definition: The International Community's Quest for Identifying the Specter of Terrorism," *Cornell International Law Journal* (2006) 491-492, #36.

Bruce Hoffman, author of *Inside Terrorism* and renowned terrorism expert, agreed and made a similar argument. Hoffman observed that, "Terrorism is a pejorative term."[60] According to Hoffman, governments or people generally apply the term to an enemy, adversary, or with whom one disagrees, because of the word's intrinsically negative connotation.[61] Few words in the English vernacular have a stronger or more negative connotation than terrorism. Labeling an individual as a criminal, crook, thug, adversary, enemy combatant, or even an assassin does not garner the same degree of emotion or provide a stronger preconceived notion than the terrorist label. Hence, the decision to call someone a "terrorist" or label a government or organization a "terrorist state" or "terrorist organization" is almost unavoidably subjective, depending largely on whether one sympathizes with or opposes the person, group, or cause.[62] However, as opposed to moving the discussion on the definitions of terrorism forward, Hoffman ironically added his own definition of terrorism as if there were not enough already.

The pejorative nature of terrorism is apparent in the different perceptions that Al Qaeda and the US have of each other. Although Al Qaeda is not a state, in 1996, Bin Laden issued a fatwa declaring war against the west and called on all Muslims to join Al Qaeda's struggle against the West: "My Muslim Brothers of The World: Your brothers in Palestine and in the land of the two Holy Places are calling upon your help and asking you to take part in fighting against the enemy–your enemy and their enemy—the Americans and the Israelis. They are asking you to do whatever you can, with one's own means and ability, to expel the enemy, humiliated and defeated, out of the sanctities of Islam…"[63] Subsequently, Al Qaeda perceived its acts of violence against the US as acts of war. However, even though the opening lines of the National Strategy for Combating Terrorism state, "The terrorist attacks of September 11, 2001…were acts of war against the United States of America and its allies..." the US perceived them as acts of terror. [64]

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[60] Hoffman, *Inside Terrorism*, 23.
[61] Hoffman, *Inside Terrorism*, 23.
[62] Hoffman, *Inside Terrorism*, 23.
[63] Jim Lehrer, News Hour, Online Special Report. http://www.pbs.org/newshour/terrorism/international/fatwa_1998.html. The text is the second fatwa originally published on February 23, 1998, to declare a holy war, or jihad, against the West and Israel. It is signed by Osama bin Laden, head of al Qaeda; Ayman al-Zawahiri, head of Jihad Group in Egypt, and several other Islamic terrorist groups.
[64] 2003 National Strategy for Combating Terrorism.

In all actuality if the US stated that Al Qaeda declared war, then members of Al Qaeda should be referred to as soldiers.

Why is it that a nation can declare war against an organization but an organization, i.e. a non-state actor, is unable to declare war against a nation even though the statement above acknowledges the organization's acts as acts of war? Furthermore, the US considers Osama bin Laden a terrorist after the African embassy bombings and 9/11; however, it labeled Osama bin Laden et al as Freedom Fighters during the Soviet invasion of Afghanistan when it suited US interests. The different perceptions also exist with states. Prior to toppling the Baathist regime, the US labeled Iraq as a terrorist regime and state sponsor of terrorism, but between 1980 and 1988 the US supported Iraq during the Iran-Iraq war.[65]

The use of pejorative terms to gain moral superiority against an enemy is, of course, common in statecraft. In some ways, Rome viewed the Barbarians in the same manner the US views terrorists. The word barbarian has the Latin root, *barbarus,* which according to the University of Notre Dame's Latin Dictionary, means foreign, strange, uncultivated, rough, or savage.[66] Ostensibly, to the Romans a *barbarus* was their pejorative term for a member of one of the many Germanic tribes. In the decade following the French Revolution, the English used the Term *Jacobin* in a similar manner. Robert Bisset, referring to the British reformer movement, applied Jacobin indiscriminately to those he either did not like or did not agree with his beliefs or values. Bisset wrote in his Anti-Jacobin review that a Jacobin was an "enemy of Christianity, natural religion, monarchy, order, subordination, property, and justice."[67]

Terrorism is War

If terrorism is a pejorative label for political rhetoric, then what is the common definition of terrorism really defining? Carl von Clausewitz, the great Prussian philosopher, defined war as a continuation of political intercourse carried on with other

[65] Sam Sasan Shoamanesh, "History Brief: Timeline of US-Iran Relations Until the Obama Administration," Massachusetts Institute of Technology
[66] University of Notre Dame Latin Dictionary. http://www.archives.nd.edu/cgi-bin/lookup.pl?stem=barbarus& ending
[67] Michael T. Davis, "The British Jacobins and the Unofficial Terror of Loyalism in the 1790s," *Terror: From Tyrannicide to Terrorism,* Edited by Bret Bowden and Michael T. Davis (Queensland: University of Queensland Press, 2008), 99.

means in his magnum opus, *On War*.[68] If terrorism is politically motivated violence to achieve an objective, then why is it not war when Clausewitz's definition and the definition's of terrorism are essentially the same? In actuality, terrorism is war; both sides have objectives, use calculated and deliberate acts of violence as a means to an end, and have various motivations behind their acts.

A major issue to address is whether non-state actors can prosecute a war. Clausewitz wrote in the early 19th century prior to the industrial revolution and is primarily referring to states and their militaries in his tome. Given that his theory is now almost two hundred years old, it is easy to understand why one can relegate war to states alone. However, times are different and sub-national organizations exert substantial influence over the state in which they exist, as well as other international actors. Consider the 2006 Israel-Hezbollah conflict now referred to as a hybrid-war. Hezbollah, a non-state actor in Lebanon initiated a 34-day conflict against Israel, a state. By all accounts on the Israeli and Hezbollah sides, the conflict constituted a war.[69] Additionally, consider the "state" of Palestine. It is not fully recognized by the United Nations as a state and is listed under the list of "non-member states and entities" and categorized under "Other entities having received a standing invitation to participate as observers in the sessions and the work of the General Assembly and are maintaining permanent offices at Headquarters." Although it is not a state it wields significant influence in the Middle East. Furthermore, wars have existed between empires and tribes well before the treaty of Westphalia and the advent of the state. Wasn't it a war when the Roman Empire fought the Germanic tribes, or when the papacy initiated the crusades and attempted to expel the Muslims from the holy land?

The second issue to deal with is the deliberate targeting of civilians. This component of the definition allows the actor using the term terrorism to stand on the moral high ground as if they would never target non-combatants or civilians. However, warring parties targeted civilian populations with violence for thousands of years. Author Stephen Turnbull observed that a civilian massacre usually accompanied a Mongol

[68] Carl von Clausewitz, *On War*, Rev. ed. Michael Eliot Howard, and Peter Paret, (Princeton, N.J.: Princeton University Press, 1984), 87.
[69] For a succinct review of the 2006 Israel-Hezbolah conflict: William Arkin, *Divining Victory: Airpower in the 2006 Israel-Hezbollah War* (Maxwell, AFB: Air University Press, 2007).

Conquest.[70] Another example was the problem the Normans faced trying to subdue the Welsh around 1097. The Norman King William II (Rufus) waged a ruthless campaign against the Welsh under Gruffyd in which William "intended to abolish and utterly destroy all of the people until there should be alive not so much as a dog."[71] William also proposed to cut down all of the woods and groves so that the people could not make shelters or defenses.[72]

During the late nineteenth and twentieth century, industrialized nations have purposefully targeted civilian populations just as ruthlessly as civilizations considered barbaric. In his book, *Targeting Civilians in War*, Alexander B. Downes argues that the British targeted the population during the Boer War as well as the German population during the starvation blockade of WWI.[73] Perhaps the most well known examples are the RAF's deliberate bombing of the German population during WWII as a part of the Combined Bomber Offensive, the USAAF's firebombing of the Japanese populations in the Pacific, and the only use of nuclear weapons against population centers in Hiroshima and Nagasaki. Although nations, especially the US, try to a large extent to limit collateral damage during conflict, there is no guarantee they would in the future and if targeting non-combatants means abandoning the moral high ground to ensure national survival then a state will surely choose its existence over an enemy's population.

The pejorative nature of terrorism has spread to more than organizations and people. Now, with such widespread usage the terror label often extends beyond the organization to its actions, tactics, and even weapons it may possess, i.e. cyber terrorism, terror tactics and terror weapons. But what is a terror weapon? If an individual uses a gun to commit a crime, is the gun a terror weapon if the perpetrator intended to create fear in the people he was accosting? No, of course it is not. Assessing something as a terror weapon is using the word terror pejoratively because one does not agree with the manner in which the weapons were used. Thus, instead of terror weapons, the rockets and flying bombs developed at Peenemünde were traditional weapons, albeit technological wonders that later paved the way for space exploration.

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[70] Stephen Turnbull, *Ghengis Khan and the Mongol Conquests 1190-1400* (Oxford: Osprey Publishing, 2003), 76.
[71] John Nagl, *Learning to Eat Soup with a Knife* (Chicago: University of Chicago Press, 2002), 26.
[72] Nagl, *Learning to Eat Soup with a Knife*, 26.
[73] Alexander B. Downes, *Targeting Civilians in War* (New York: Cornell University Press, 2008), 7.

This thesis illustrated that the term terrorism is pejorative and what politicians are really referring to is war initiated by non-state actors yet the issue whether terrorism really exists still remains. This thesis posits that terrorism is violence that is not tied to a political, ideological, or religious end. Essentially terrorism is when an actor inflicts harm on another simply because they possess the capability to do so or perhaps even enjoy it. Vlad Tepes might be the best example of this. He impaled many of his adversaries but he also impaled many of his own people. Although difficult to determine for certain, if Tepes conducted his horrific acts simply because he could then they would have constituted terrorism. Another example is some of the acts that the SS committed in the very last months of the war. Neufeld provided the following account: "Nothing, however, compares in horror with the worst single massacre in the history of Mittelbau. At Gardelegen, SS guards herded into a barn 1,016 evacuees exhausted from marching and set the building on fire, burning them alive."[74] Violence that is not tied to a political end actually warrants the terrorism label, because terror is now the end and no longer the means to an end.

Conclusion

The brief summary of past accounts of terrorism and terror weapons sketched above depicts events that are often misconstrued in their cause and effect relationship, or that a preconceived notion about an actor or its motivations exists. Hitler committed the most horrific and heinous acts in the twentieth century thus there is a natural tendency to think Germany's behavior during WWII was nefarious. Additionally, politicians often refer to terrorism in a pejorative sense and opine that terrorists "don't like our way of life," "hate Americans," or "hate us for who we are." The intention of the pejorative label in a political statement intends for the public to ostracize the group that the label is referring to. Hitler intended to ostracize the British population by referring to allied bombing as terror bombing. Additionally, were the German rockets terror weapons or were they simply weapons for war? Stripping away the labels and seeing an event for what it is, instead of how another intends to describe it, provides a greater degree of clarity for understanding why an event happened in the first place. Additionally, removing the terrorism label illustrates what it is in actuality: war.

[74] Michael Neufeld, *The Rocket and the Reich*, 299

The next chapter delves into the complex area of inter-service rivalries and begins to lay the foundation for the crux of the argument that the innovations at Peenemünde were spawned from rivalries between the *Luftwaffe* and the Army. In doing so, the chapter illustrates that interservice rivalries have existed for centuries and are likely to continue for perpetuity. Depending on the perspective one takes, a rivalry can either be beneficial, detrimental, or even something completely different.

Chapter 2

The Origins of Interservice Rivalry

> *Too often in this war did the leaders fight each other while the troops fought the foe.*
>
> —B. H. Liddell Hart

Introduction

Authors of military history have a tendency to point out inter-service rivalries, yet they rarely go into great detail about the genesis of such competition, assuming that the reader already understands that it is a given in military circles. After reading a considerable amount of military history, one soon notices that inter-service rivalries are quite commonplace in the military and should discover that for whichever reasons services simply cannot co-exist without squabbling like children. After visiting the United States during WWII, Sir John Slessor accurately assessed the inter-service rivalry that existed in the US when he stated, "The violence of inter-service rivalry in the United States had to be seen to be believed and was an appreciable handicap to their war effort."[1] In a 1959 edition of TIME Magazine, a columnist wrote "in the sticky midsummer heat at Washington's Boiling Air Force Base last week, 3,000 Army, Navy, Air Force and Marine Corps servicemen, high civilian brass and Congressmen turned out for a unique demonstration of interservice unity…to salute two four-star Air Force generals."[2] What immediately stands out from the article is that unity between services is an exception and not the norm and suggests that interservice rivalries will endure through time.

This chapter provides the theoretical framework for the reasons interservice rivalries persevere through time. It first illustrates that inter-service rivalries have existed for

[1] Eric Larrabee, *Commander in Chief: Franklin Delano Roosevelt, His Lieutenants, and Their War* 1st ed. (New York: Harper & Row, 1987), 105.
[2] "Armed Forces: Interservice Affection." *TIME Magazine*, 10 August 1959. http://www.time.com/time/magazine/article/0,9171,811187,00.html

centuries, although the evidentiary past is predominantly from the twentieth century when there is much more literature on military history. Following a look at historical examples of inter-service rivalry, the chapter then tackles the issue of why inter-service rivalries exist and how organizational theory helps explain their permanence in military culture. This chapter then argues when services make changes to their DOTMLPF in order to reflect a change in the security environment, those changes exacerbate the competitive environment services exist within and create conflicts. The chapter concludes by illustrating that although rivalries and disputes may appear negative, they may in fact be beneficial but there is more than one perception to consider and those perceptions from other parties may differ significantly.

Interservice Rivalries Through the Ages

It often appears that only modern industrialized nations with independent military services experience inter-service rivalries, but in fact such rivalries have existed for hundreds of years. One author even suggested that rivalries between land components and naval components started several millennia ago when militaries first began to use the sea militarily.[3] That is debatable but a more recent example is from the time of the Ottoman Empire in 1578. The Janissaries and Sipahis—different cavalry regiments—always suffered from extremely tense relations over matters of prestige.[4] Discontented over the disparity between the sums issued to them and the Sipahis by the Sultan seven years earlier, the Janissaries only provided four thousand of the fifty thousand troops required when the Sultan again called on them to suppress rioting in the city of Istanbul.[5] The rivalry, which produced jealousy and animosity between the two groups, ultimately led to lack of support for the Sultan when he required the full strength of his forces. Although the Sultan knew of the rivalry between the two groups, his inclination to remain on the periphery of their affairs later prevented him from quelling the violence in the city.

Even Napoleon experienced inter-service rivalry between his army and Navy during a time when England posed a serious threat. A serious dispute arose between the Army and Navy over coastal defense that Napoleon later adjudicated. Napoleon's army was

[3] Eric Ash, "Purple Virtues: Curing Unhealthy Interservice Rivalries," Unpublished thesis for graduation from the US Air Force Air War College, 1999. The author suggests that rivalries may have first started by Indo-European "Sea Peoples," such as the Philistines around 2000 BC.
[4] Rhoads Murphey, *Ottoman Warfare, 1500-1700* (Rutgers, NJ: Rutgers University Press, 1999), 140.
[5] Murphey, *Ottoman Warfare, 1500-1700,* 140.

responsible for engineering work at the ports as well as coastal defense elements, yet the Navy wanted them moved to different locations to protect coastal navigation.[6] Incensed by what they saw as an infringement on their domain, Army leaders refused to budge even though the move would have the beneficial effect of preventing England from using its Navy to attack France. Refusal to cooperate for the good of the nation appeared to be less of a concern than the prestige of the Army in the new republic.

During WWII, inter-service rivalry was rampant and existed in almost every fighting force. In the British military, there were sour relationships even before the war started. During the interwar period, the British devoted limited funds to defense; however, the services still squabbled over issues of fairness. There was strong resentment by the Army and Navy towards the Royal Air Force, as they suspected that the RAF was receiving more than its fair share of resources.[7] Fueling part of the resentment towards the RAF was the fact that the Navy had lost its aviation arm to the RAF in 1918, and it was not returned to naval control until 1937 while Germany was loudly beating the drums of war. Commenting on the underlying reasons for the tension between the services, Williamson Murray suggested that senior RAF leaders were still faithful to Air Chief Sir Hugh Trenchard's ideological belief in the efficacy of the bomber, which negated the need for cooperation with the other services.[8]

In the US, rivalries and resentment among the services was just as strong. The Navy and Marine Corps understood combined arms warfare, and their doctrine placed a premium on cooperative efforts between services. However, the US Army Air Corps was more interested in strategic bombing than supporting the forces on the ground. Had the relations between the Air Corps and the Navy been better, the Air Corps might have had a better ability to employ air assets in the ground fight. According to author and historian Tom Hughes, the inter-service rivalries and the unwillingness to listen and learn carried heavy consequences for the Army Air Forces when it entered the war.[9] In the Pacific matters were just as bad between the Army and the Navy. Parochialism and the personalities of key leaders prevented unity of effort among the Allied forces.

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[6] Alan Schom, *Trafalgar: Countdown to Battle, 1803-1805* (Oxford: Oxford University Press, 1992),110-112.
[7] Williamson Murray, *War in the Air 1914 – 45* (London: Cassell, 1999), 78.
[8] Murray, *War in the Air 1914 – 45*, 88.
[9] Thomas Hughes, *Overlord* (New York: The Free Press, 1995), 66.

Sandwiched between determined personalities and unable to shake loose from their own service interests, the Joint Chiefs deliberately chose a divided strategy of dual command in the Pacific instead of placing the entire theater under one commander.[10] Inter-service rivalry would have most likely c hampered the planned invasion of Japan had Japan not surrendered after the bombing of Hiroshima and Nagasaki.

The Axis powers were not immune from inter-service rivalries or their negative effects on the services. The Imperial Japanese Navy bore most of the burden during the China War for four years, even though it was a continental conflict and fell within the purview of the Army. Consequently there was a large disparity in doctrine and operational skills between the Japanese Army Air Forces and Naval aviation that continued to fuel inter-service rivalry, which dated back to back to 1910 when many Japanese officers withdrew from the Army's research committee to form its own aviation research agency.[11] When the navy increased its aviation capacity in 1937 this further inflamed the resentment between the services which, as historian Mark Peattie observed, created mistrust between the two services that lasted until the end of the war and was a primary contributor to Japanese defeat.[12] The Japanese government, more concerned with individual pride and honor, was well aware of the ongoing rivalry and did nothing to prevent the corrosive relationship from ensuing.[13]

Inter-service rivalry in the German military was just as fierce. Each service was extremely protective of its own domain and quick to respond when it perceived that another service was infringing on turf it perceived as its own. During the rearming period, the Navy's first priority was to gain its own naval air arm, and was wary that this might be the first step in losing naval aviation to the new *Luftwaffe*. Upon hearing of naval intentions, Goering insisted that there could be only one air force and everything that flew must fall under "his" *Luftwaffe*.[14]

This was the beginning of the permanent reduction of naval aviation. In January 1939 *Luftwaffe* commander Hermann Goering and Admiral Erich Raeder, Commander of the

[10] Jason B. Barlow, "Inter-service Rivalry in the Pacific," Joint Forces Quarterly, Spring (1994), 81.
[11] Mark Peattie, *Sunburst* (Annapolis, MD: Naval Institute Press,2007), 126.
[12] Peattie, *Sunburst*, 126.
[13] Peattie, *Sunburst*, 29.
[14] James S. Corum, *Why Air Forces Fail: The Anatomy of Defeat*, Edited by Robert Higham and Stephen J. Harris (Lexington: University Press of Kentucky, 2006), 205.

German Navy, agreed to reduce the strength of the *Seeflieger* from 62 to 41 squadrons by the end of 1941. When the war started in 1939 only 19 squadrons were available. By the end of 1941 naval aviation comprised only two weak squadrons, while the remaining aircraft and units were transferred to the *Luftwaffe* or disbanded.[15] Goering's parochialism prevented the Navy from garnering capabilities they would later require during the war; however, Admiral Raeder would get the last laugh. Although Goering was the *Reichsmarschall* and was second in command of the Third Reich, just prior to committing suicide, Hitler appointed Admiral Karl Dönitz, Raeder's successor, as Supreme Commander and issued a warrant for Goering's arrest. Chapter 4 will delve into inter-service rivalry within the German military in greater detail.

Inter-service rivalries are not restricted to periods of war, and are just as fierce during times of peace. Following the birth of the independent US Air Force in the aftermath of WWII, rivalries between US military services only worsened. Captured in Jeffrey Barlow's book, *Revolt of the Admirals*, the rivalry between the recently independent Air Force and the Navy is now military lore. Spurred by numerous arguments over funding and the dubious cancellation of the Navy's top priority, the super carrier *USS United States*, the incident provoked Air Force and Naval leadership to engage in some questionable leadership practices. One of the most egregious examples was when the Secretary of the Air Force lied to Congress about the quality of weapons testing on the B-36, the USAF's top acquisition.[16] The entire debacle ultimately led to the dismissal of the Chief of Naval Operations.

As recently as 2003, when the US launched Operation Iraqi Freedom, the Air Force and Army could not agree on the optimal location of the Fire Support Coordination Line (FSCL). Used as a fire support measure to prevent fratricide, the FSCL's location was disconcerting to the Air Force, which believed it restricted its bombing campaign. In accordance with Army doctrine, the Army had placed the FSCL far enough out to ensure there was ample clearance to conduct helicopter operations. According to one senior

[15] Sonke Neitzel, "*Kriegsmarine* and *Luftwaffe* Co-operation in the War against Britain, 1939–1945" *War In History* #10, Vol. 448, 2003, p. 451.
[16] Jeffrey G. Barlow, *Revolt of the Admirals* (Dulles, VA: Potomac Books, 1989), 215 & 266.

officer, there was such tension over the issue that it caused the environment in Washington D.C. to become "downright ugly."[17]

Unless services can determine an effective means of cooperation, inter-service rivalries could potentially lead to defeat against a powerful and technologically advanced adversary. The bickering back and forth does not provide an environment conducive to the "jointness" that will be increasingly required in future conflicts. However, inter-service rivalries are not going away any time in the near future. Whether rivalries started when mankind first took to the sea or began a thousand years after that is irrelevant. The larger point is that they have endured and continue to persevere regardless of culture, era, religion, or technological advances. Their perseverance suggests that there are enduring factors which continually produces conflict between services.

The Roots of Interservice Rivalry

The underlying reasons for inter-service rivalries are rooted in organizational theory. Inter-service rivalries are primarily the result of continual competition generated by organizing military services along functional specialties. This provides a competitive environment where services, just like thoroughbreds in a horse race, continually jockey for position against one another. Other factors such as funding, institutional identity, service culture, and prestige reinforce polarization, strengthen competition and resolve, exacerbate issues, and provide catalysts for increased conflict.

To determine the roots of rivalry, one must first view the military as an organization that consists of a hierarchy of bureaucracies. The Department of Defense (DoD) is not monolithic and although it contains various organizations that are external to the services, the majority of the DoD's composition is from each component. This is true of most nations' defense establishments. According to Max Weber's description of bureaucracy, the US military writ large, and the services that comprise it contain a clearly defined set of rules and procedures, a division of labor according to functional expertise, a clearly defined chain of command, a system of meritocracy that promotes those who adequately perform, and professional managers.[18] Each of Weber's criteria is clearly recognizable.

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[17] Eric A. Ash, *Purple Virtues*: Curing Unhealthy Inter-service Rivalries. Master's Thesis, Air University, 1999.

[18] Max Weber and Sam Whimster, *The Essential Weber: A Reader* (London: Routledge Press, 2004), 245-260.

The military is known for its rules and procedures that are outlined in the thousands of regulations that dictate everything from appearance to the type of letterhead acceptable in correspondence. The military is organized into functional services that specialize in a different medium and possesses a defined chain of command. Those who form the chain of command are placed in those positions based on their performance as lower level managers and evaluated through a system of promotions based on merit.

The goal of bureaucracy is to maximize efficiency, which is the reason for the delineation of functional specialties in the criteria above. Starting with the organization of a separate Army and Navy in the early 1800s, each service was organized separately into functional specialties according to its operating medium, i.e. air, land, and sea. The creation of the navy was intended to maximize efficiency by creating a separate service for the sea. Even the word "navy," which is derived from the Latin term *navigiom* meaning a fleet of ships, implied that a separate service was a necessity.[19] The pursuit of bureaucratic efficiency continued two centuries later when the 1947 National Security Act established the Air Force. Highlighting the accentuation on efficiency, the act stated that each service was "an efficient team of land, naval, and air forces."[20] One wonders if the continual search for efficiency will ever split off a separate space and cyber force from the Air Force.

According to Weber, bureaucracies are "technically efficient instruments of administration" because functional specialization enabled its employees to learn to perform their duties optimally. However, Gareth Morgan pointed out that instead of the cooperation functional specialization is intended to foster, it paradoxically increases competition.[21] The resulting competition is greater with functional specialties than with non-specialized organizations, because organizations compete with one another for resources. Competition between organizations and other actors emerges because of a shared reliance on the same resources. Just as a tree requires water and sunlight to grow, services require funding. One tree will survive but when other organisms are introduced into the ecology competition becomes increasingly fierce as organisms are fighting for

[19] University of Notre Dame Latin Dictionary. http://www.archives.nd.edu/cgi-bin/lookup.pl?stem=navy
[20] US National Security Act of 1947. For further information visit: http://intelligence.senate.gov/nsaact1947.pdf
[21] Gareth Morgan, *Images of Organizations* (Thousand Oaks, CA: Sage Publications, 2006), 30.

their survival. Organizational ecologists have identified the competition between organizations over resources as "niche overlap," which is the basis for competition since organizations rely on some of the same resources for growth and survival.[22]

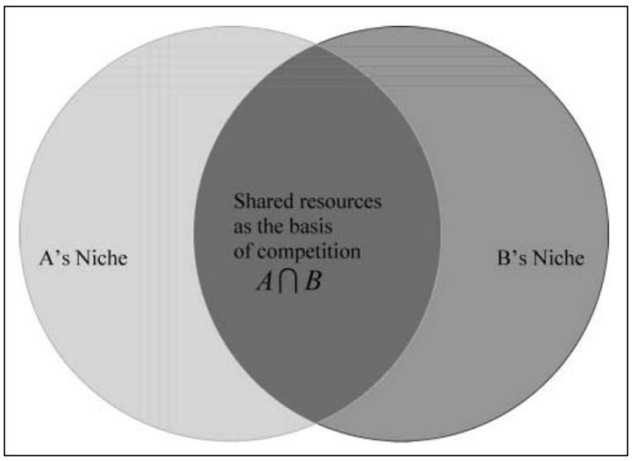

Figure 3: Niche competition
Source: Paul Ingram, "Structure, Affect and Identity as Bases of Organizational Competition and Cooperation," *The Academy of Management Annals* Vol. 2, No. 1, 2008, 275–303, 277.

Just like in a biological ecosystem, competition is a natural part of any organizational system. The very nature of the services' existence involves competition for resources in order to survive. Instead of water, services fight for funding which allows for growth and adaptation.

Predicting the future is difficult and services do not know whether they will continually receive the same amount of funding or what events will lead to a reduction in their budget. In order to hedge resources, services will at times conduct themselves in less than an honorable fashion—Morgan that organizations often pad their budgets to defend their own interests and projects.[23] Illustrating this, the 1949 Hoover report on military efficiency found that military budgets during WWII and earlier were all "padded disgracefully."[24] There have also been occasions when a drastic reduction in defense spending resulted in slashes to service budgets increasing the competition. Despite increased tensions with the Soviet Union after WWII, Truman told his Secretary of

[22] Paul Ingram, "Structure, Affect and Identity as Bases of Organizational Competition and Cooperation," *The Academy of Management Annals* Vol. 2, No. 1, 2008, 275–303, 277.
[23] Gareth Morgan, *Images of Organizations* (Thousand Oaks, CA: Sage Publications, 2006), 30.
[24] The Hoover report, 1949-1953: A Citizen's Guide to the Progress of Federal Reorganization, from creation of the original Commission on Organization of the Executive Branch of the Government to the end of the first session of the 83d Congress, Volume 1, p. 6

Defense that the military would receive no more than $15 billion—significantly less than the previous year.[25] Ultimately, the cut in funding spurred the Air Force and Navy into conflict leading to the Revolt of the Admirals.

Organizational Identity and Culture

Competition between services is also fueled by organizational identity. According to sociologists Stuart Albert and David Whetten, when members of an organization respond to the question, "who are we?" organizational identity is the result.[26] Albert and Whetten argued that organizational identity possesses three components: what is taken by employees to be the central attributes of the organization; what makes the organization distinctive and therefore unique from other organizations in the eyes of the employees; and what is perceived by employees to be enduring, regardless of objective changes in the organizational environments. These components suggest that organizations with a strong identity are distinctive from other organizations and will form a unique and cohesive organization. The cohesiveness within a service is strengthened by the notion that members routinely risk life and limb and could even pay the ultimate price during time of war.

When two organizations exist within a larger organization such as military services within the military writ large, organizational identities have a tendency to polarize individuals into their respective services. Due to the connection between an individual's identity and self-esteem, the service member cares about the perceptions others make about their organization or service.[27] When an organization's identity is threatened or countered in any way individuals affirm their own organizational identities and also psychologically disengage from the perceived threats.[28] Therefore, when service identities clash or if a service member feels threatened by another service identity the individual will increase the polarization between the services by limiting or preventing

[25] Andrei Cherny, *The Candy Bombers* (New York: Penguin Group, 2009), 231.
[26] Stuart Albert, David Whetten, "Organizational Identity,"
[27] Elsbach, K. D., & Kramer, R. M. "Members' responses to organizational identity threats: Encountering and countering the Business Week rankings." *Administrative Science Quarterly*, 1996, 41 (3), 442-476, 442.
[28] Elsbach, K. D., & Kramer, R. M. "Members' responses to organizational identity threats: Encountering and countering the Business Week rankings." *Administrative Science Quarterly*, 1996, 41 (3), 442-476, 443.

their social interaction. Subsequently, when separate identities routinely engage there is a higher likelihood for conflict.

Organizational identity fuels the notion of cognitive identification, which is more than mere identification with an organization. Cognitive identification is an individual's cognitive perception of oneness with an organization.[29] For instance, one is not a member of the military when he simply wears a uniform; he must have made the cognitive connection that, through one way or another, he has gained membership. Cognitive identification is much stronger then organizational identification because the service member has been inculcated with not only the service's identity but also with its values, history, essence, and sense of pride. Essentially, cognitive identification occurs when the service member adopts the culture of the service he belongs to.

Every organization has a culture. In the military this is referred to as service culture and is different than military culture, which is addressed in Chapter Three. According to James Wilson organizational culture is a "persistent, patterned way of thinking about the central tasks and human relationships within an organization…culture is to an organization what personality is to an individual."[30] The organizational cultures of military services are particularly strong because people are promoted to positions of increased responsibility and authority through the service's internal meritocracy. While there are some that enter the military laterally, the preponderance of those entering military service do so from the very bottom. If the culture is shared and endorsed across the organization, then a sense of mission accomplishment exists both internally and in its approach to the outside world.[31]

As individuals are increasingly promoted to increased positions of authority and responsibility their time as a member of that service has continually increased as well. Subsequently, service members have gained a greater sense of service identity and have strengthened their cognitive identification through years of service. Therefore loyalty to that service has also increased when individuals achieve high positions of authority because they have spent, in most cases, the majority of their life in that service. Thus,

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[29] Ashforth, B. E. and F. Mael "Social identity theory and organization," *Academy of Management Review*, 1996, 14, pp.20–39. 21.
[30] James Q. Wilson, *Bureaucracy: What Government Agencies Do and Why They Do It* (New York: Basic Books, 1989), 91.
[31] James Smith, "Air Force Culture and Cohesion," *Airpower Journal*, 1998. Fall ed.

senior officers, who have considerably strong loyalty to their own service, are more likely to enter into conflict with another service as a result of fiercely protecting their own service's programs and initiatives.

Certain types of organizational personalities may increase the likelihood of conflict between services. According to several researchers, within the military there are greater numbers of individuals who favor competition and conflict as a means of dispute resolution than those who do not.[32] When organizational members who have a greater inclination to fight instead of flee rally behind the issue or program that their service is championing, the propensity for conflict between services over an issue is far greater. A strong sense of loyalty only increases the possibility that conflict between individuals and subsequently organizations will exist.

Prestige

Another powerful factor that contributes to the competitive environment of inter-service rivalries is the notion of prestige. Robert Gilpin appropriately observed, "The reputation for strength is what we call prestige."[33] In his statement, Gilpin was equating strength to power, which is a strong motivator for organizations to gain additional prestige. To a military service, gaining prestige provides considerable ability to influence other services and organizations, or even the decisions of the state. It also provides organizations with numerous benefits such as additional funding, competitive people, notoriety, and fame. However, the prestige an organization has garnered may not provide the hoped-for power and sway. According to one political scientist, it is easy to exaggerate the emotional significance of prestige.[34]

Not only is prestige important at the organizational level, but also with each individual. Political scientist Barry Posen found that when individuals join an organization, more often than not they are searching for more than just an hourly wage or a salary, but are also searching for power.[35] The individual seeking prestige provides an internal positive feedback loop within the organization that reinforces the perceived strength and reputation of the organization. Subsequently, more individuals try to enter

[32] Michael Russell,"Personality Styles of Effective Soldiers," Military Review, Jan-Feb 2000. 69-74, 70.
[33] Robert Gilpin, War and Change in World Politics, (Cambridge, Cambridge University Press, 1981),32.
[34] Amitai Etzioni, "International Prestige, Competition and Peaceful Coexistence," *Archives Europeenees de Sociologie*, Vol. 3, No. 1 (1962), pp. 21-41. p. 22
[35] Barry Posen, *The Sources of Military Doctrine* (Ithaca, NY: Cornell University Press, 1986), 43.

the organization or service because they perceived that the organization has garnered a certain level of prestige that will provide them with personal benefit. Once inside the organization, individuals are increasingly aware of the perceptions by those who are not members of the organization. This is perceived external prestige and it can powerfully influence organizational members because of their concerns regarding how those external to the organization, or in this case a military service, judge the status and image of their organization.[36]

Information on how the organization is perceived can come from a number of different avenues, either internal or external to the organization. When the information is positive, the organization reaps the rewards. However, when the information is negative and the overall perception of the organization begins to decline, there can be a significant effect on an organization's behavior. Loss of prestige to an organization, like other frustrations, normally generates a large variety of responses, ranging from withdrawal to enhanced efforts to regain lost prestige. During times of war, the loss of prestige may be even more severe or at least be perceived as such. When a large loss of prestige is added to the economic insecurity and emotional deprivations that exist during wars and conflicts, intensive and widespread feelings of aggression are likely to be aroused.[37] The aggressive behavior derived from the loss of prestige is likely to exacerbate the rivalry between services and fuel additional hostility.

DOTMLPF

Inter-service rivalries seem to be ubiquitous; however, they are always over something different. Whether it is the budget, equipment, each service's role in the nation's defense, or some other issue, each instance of interservice rivalry is a different issue. Why then, are inter-service rivalries not referred to as inter-service disputes? Disputes are not long term, personality dependent, and are usually resolved after a relatively short period. The disagreement between Goering and Raeder was merely a dispute between senior leaders over the appropriation of air forces. Yet, the issues that Goering and Raeder were debating go much deeper than simply the numbers of aircraft.

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[36] Karim Mignonac, "A matter of prestige? Examining the role of perceived organizational image in turnover intentions of key people." A paper presented at the International Conference on Management held in Geneva, Switzerland 13-16 June 2006.

[37] Amitai Etzioni, "International Prestige, Competition and Peaceful Coexistence," *Archives Europeenees de Sociologie*, Vol. 3, No. 1 (1962), pp. 21-41. p. 22

Functional specialization, organizational identity, and attempts to gain prestige provide a corrosive environment and spur competition between the services, but they are not the root cause for disputes. Moreover, there are a number of different causal explanations for a particular dispute, but each one is traceable to a service seeking to maintain its existence by staying relevant. Because the environment is continually changing services continually assess and change their doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF) in order to remain relevant. Consider a pot of water that is sitting on the stove. The water will never boil until heat is applied. In the boiling water metaphor, inter-service disputes resulting from changes in DOTMLPF provide the heat that intensifies the rivalry until it boils over. As a service adapts to the changing environment, it changes various, though not necessarily all, aspects within the DOTMLPF.

In the late 1920s Karl Becker, the head of the ballistics and munitions section of the German Army's Weapons Testing Division, was enthralled with the rocket's military potential and in 1929 received approval from the *Reichswehrministerium* to begin development. Michael Neufeld noted that Becker was convinced that when the rocket was used as a weapon it would "produce a stunning psychological blow against an enemy."[38] According to Thomas Hughes, the development of the initial A-2 rocket, an earlier and smaller version of the A-4, would have constituted a "radical invention" because it initiated the development of completely new systems.[39] Interestingly, the Germans were unclear on exactly how their rocket would work or its exact form but had the tacit knowledge that they must preserve Germany's sizeable development lead over all other nations because of the rocket's potential to produce the element of surprise.[40]

The systems the rocket initiated comprise the DOTMLPF, albeit some changes were much larger than others. Organizations and facilities soon began to develop and expand ultimately leading to the development and move to Peenemünde. Two factors drove the move from Kummersdorf to Peenemünde: the need for secrecy and the inadequacy of the

[38] Michael Neufeld, *The Rocket and the Reich* (New York: The Free Press, 1995), 275.
[39] Thomas P. Hughes, "The Evolution of Large Systems," *The Social Construction of Technological Systems* edited by Wiebe Bijker, Thomas P. Hughes, and Trevor Pinch (Cambridge, MA: The MIT Press, 1989), 58.
[40] Michael Neufeld, "The Guided Missile and the Third Reich," in *Science, Technology, and National Socialism*, edited by Monika Renneberg and Mark Walker (Cambridge: Cambridge University Press, 2003), 57.

industrial technology base.[41] The issue of secrecy had an important effect on the interservice rivalry between the Army and the *Luftwaffe* and is discussed further in chapter four. The lack of a technological base provided the Army with the impetus to develop the complete manufacturing capability for test rockets at Peenemünde thus increasing the size of the system and subsequently many of the DOTMLPF factors as well.

The changes in the DOTMLPF that result from the introduction of a new radical technology provide the catalyst for interservice disputes. As the system expands and grows it begins to infringe on areas that another service considers to fall within its own realm as a functional specialty. Consider the tree metaphor that was previously used. As the tree grows it competes for resources and funding with the tree that is beside it, i.e. another service. There is competition over resources but not necessarily any conflict. However, when large branches begin to develop, in this example it is the radical new system, they will soon be physically touching the tree that is next to it. When the branches begin to come in contact with one another the contact represents overlaps in a service's DOTMLPF. Consider the Navy's intention to develop the flat deck carrier during the Revolt of the Admirals episode which would have enabled it to operate long-range attack aircraft capable of carrying atomic weapons. The Navy adjusted their DOTMLPF and the result was the development of the carrier. As this system grew, i.e. the large branches, it began to come in contact with another service's DOTMLPF, the Air Force bomber. Conflict naturally ensued. Similarly, when the Army began developing its rocket the system continued to grow until it began to come in contact with the *Luftwaffe.*

Inter-service Rivalry Perspectives and Perceptions

Do service perceptions matter? Before answering this important question, a definition is in order. Robert Jervis defined perception as a process of cognition in which observation of the world forms the actor's beliefs resulting in the actor's psychological milieu—perception forms the world as the actor sees it and becomes the actor's reality.[42] The short and simple answer to the question is yes, of course perception matters.

[41] Neufeld, "The Guided Missile and the Third Reich," 57.
[42] Robert Jervis, *Perceptions and Misperceptions in International Politics* (Princeton, NJ: Princeton University Press, 1976), 7.

Determining why it matters is perhaps more important. Service perceptions are important because they shape the service's behavior in response to how it perceives the world around it. A very powerful relationship exists between perception and the resulting behavior. Indeed, Ap Dijksterhuis and Ad van Knippenberg, two Dutch psychologists, posited that perception is perhaps the strongest influence to behavior.[43] The link between perception and behavior is clearly very powerful, but people underestimate the strength of the relationship between the two.

Perception is certainly important to those who have something at stake in the rivalry. Based on their perspective, actors will form different perceptions and draw different conclusions about the outcome of an inter-service rivalry. For example, the Army's acquisition of organic attack helicopters during the Vietnam War illuminates the importance of perception and illustrates how an organization perceives an outcome influences other decisions. Moreover, the services in the midst of the rivalry are not the only ones that matter. Using the Helicopter example, four perspectives were especially significant: those of the Army, Air Force, DoD, and the Soviet Union.

The drafters of the Howze Report, sometimes seen as the Magna Carta of Army aviation, were clearly aware that in proposing a massive increase in Army aviation, including the use of Army rotary-wing aircraft in an attack role, that they were treading on extremely sensitive ground with regard to the division of roles and missions between the Army and Air Force.[44] The Air Force leadership noted that if the Army concept were adopted, the Air Force would lose many of the "vitally important functions it now carries with respect to the support of the land battle." This was merely a means of politely acknowledging that the Army was unsatisfied with the close air support it was receiving from the Air Force.[45]

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[43] Ap Dijksterhuis and Ad van Knippenberg, "The Relation Between Perception and Behavior, or how to win a game of trivial Pursuit," *Journal of Personality and Social Psychology*, 1998, Vol. 74, No 4, 865-877, 866.

[44] In 1957, General Hamilton Howze conducted a series of studies on the efficacy of helicopters in combat based on map exercises from CGSC and Ft. Benning. In his report, Howze recommended numerous additions of different forms of aviation to the Army's inventory. The example discussed in this thesis focuses on attack helicopters but Howze recommended much more.

[45] Ian Horwood, *Inter-Service Rivalry and Airpower in the Vietnam War* (Ft. Leavenworth, KS: Combat Studies Institute Press, 2006), 45.

For many Air Force officers, the adoption of helicopters by the Army was an underhanded move to capitalize on the fact that the roles of helicopters were less clearly defined than those of fixed-wing aircraft.[46] Concerned that the adoption of Army helicopters was a "stepping stone" toward grabbing control of established Air Force roles and missions, the Air Force fiercely fought their acquisition.[47] Ultimately, the Army was able to carve out its own form of organic attack aviation during the Vietnam War.

The first perspective is that of the Army. It is certainly easy to argue that the helicopter gunship was a positive outcome. Essential in past as well as current conflicts, the Army considers it imperative to its overall force structure. The Army would certainly agree that the gunship, having proved itself in combat, and the eventual development of the attack helicopter, were overwhelmingly positive additions to the force.

The second perspective is that of the Air Force. From its vantage point, the Air Force leadership did not agree that the Army should acquire attack helicopters and fought their acquisition. The Air Force argued that attack helicopters provided close air support (CAS), an Air Force mission—incidentally, it remains an Air Force mission today. According to the 1947 Key West Agreement, the Air Force claimed the Army did not have the right to usurp the mission. Thus, from the Air Force perspective, the Army was infringing on its role in national defense. Air Force perception of the matter was an even larger pill to swallow. Analyst Ian Horwood recounted that the Air Force sought to cash in on the Vietnam conflict's escalation as a source of growing potential for prestige and budgetary largesse by carving out a role for itself in Southeast Asia.[48] Undoubtedly, the Air Force's perception was that it lost a certain measure of what it set out to gain.

The third perspective is that of the Department of Defense. Given its position in the government's structure, its perspective was necessarily from the top down. As the oversight agency for all major military acquisitions, DoD either approved or disapproved the funding. However, DoD was also concerned with prosecuting the Vietnam War as well as meeting the larger Soviet threat through the US's containment strategy. Subsequently, DoD's perspective provided a broader perception of the rivalry and influenced the outcome. Even though DoD evaluators determined that attack helicopters

[46] Horwood, *Inter-Service Rivalry and Airpower in the Vietnam War*, 45.
[47] Horwood, *Inter-Service Rivalry and Airpower in the Vietnam War*, 48.
[48] Horwood, *Inter-Service Rivalry and Airpower in the Vietnam War*, 119.

could not respond to a prolonged Soviet armor threat and they added a considerable increase to the defense budget, Army attack aviation did support the Kennedy administration's transition from massive retaliation to flexible response.[49] Benefiting from the increased range of military responses possible with the additional conventional forces, Secretary Robert McNamara approved their acquisition. Although the Air Force already provided CAS, support of the administration's change in strategy took precedence over budget increases for systems deemed incapable of stopping Soviet tanks. Thus, DoD's perception was that the rivalry served the greater good of US strategy.

This was not the only time DoD drastically increased its defense budget to duplicate capabilities in order to support the larger imperatives of US strategy. In the 1950s, both the Army and Air Force competed to produce a functional ICBM. Even though the Air Force and the Army possessed competing programs, the DoD adopted both systems at considerable cost to support President Dwight Eisenhower's massive retaliation strategy.[50]

The final perspective is that of an external actor such as another state, which would have a different perception of the helicopter acquisition. As an external actor and the arch rival of the US during the Cold War, the Soviet Union would have been unable to ascertain the underlying reasons for the acquisition decision. Although the Soviets had infiltrated various parts of the government with agents, they were unaware of the heated rivalry between the Army and Air Force over roles and doctrine that led to the attack helicopter's production. The Soviet Union was presented with a new fact; however as Barton Limpman argued, "knowing a fact does not mean that one knows all the logical implications of that fact."[51] Thus, the most likely perception that the Soviet Union possessed likely stemmed from the security dilemma. The US, as a rational actor, was developing an attack helicopter capability. Therefore, the Soviet Union responded with its own rational response by developing its own variant of attack helicopters.[52] From an

[49] J. Kristopher Keener, "The Helicopter Innovation in United States Army Aviation," (Master's thesis, MIT, 2001), 22.
[50] Neil Sheehan, *A Fiery Peace in a Cold War* (New York: Random House,2009), 341.
[51] Barton L. Lipman, "How to Decide how to decide," *Econometrica,* Vol. 59, No. 4 (July, 1991), 1105-1125, p. 1106.
[52] Kevin V. Culhane, "The Soviet Attack Helicopter," (Student Report, Army Institute for Advanced Russian and East European Studies, 1977), 1-3.

external perspective, because they are unaware of organizational struggles between services, outsider observers tend to view all actions as rational decisions.

Benefits to Interservice Rivalry?

The healthy tension that interservice rivalry produces is not harmful as it forces another service to do something better, faster, or develop an entirely new process. Without competition, organizations have a tendency to stagnate.[53] Subsequently, they will not innovate and there is a possibility that they could ultimately become obsolete. Consider the Air Force's development of the ICBM in the 1950s. Not only was the Army developing a rocket, which provided substantial tension, but there was also considerable intra-service rivalry in the Air Force as well. Both sources of tension provided the impetus for creativity and innovation.

According to Owen R. Cote, disputes over various aspects of the DOTMLPF can produce innovation.[54] In his dissertation "The Politics of Innovative Military Doctrine: The U.S. Navy and Fleet Ballistic Missiles," Cote argued that competition works independently of other influences and spurs innovation amongst the individual services. Each service wants to maintain its perception of itself as an independent and relevant organization, thus when other services encroach upon its perceived area of expertise, tensions rise and a reaction occurs. Take, for example, the "Revolt of the Admirals" where a new technology, the atomic bomb, had been introduced into the security environment. The Air Force and the Navy had an "interservice dispute" over service roles and missions regarding the delivery of the atomic device. The Air Force was able to remain the sole proprietor for strategic bombing. Shortly afterwards, the Navy was developing the Trident missile for its submarines. In return, Cote chronicled how the USAF responded to the Navy's newly emerging nuclear role by enhancing missile accuracy and developing the counterforce doctrine.[55]

Conclusion

Inter-service rivalries have spanned oceans, time, and cultures and are not going away. With the increase in price for advanced technologies and as services expand into the

[53] Stephen Peter Rosen, "Service Redundancy," *Joint Force Quarterly*, Summer 1993, 36-39, 36.
[54] Owen Reid Cote, Jr. "The Politics of Innovative Military Doctrine: The U.S. Navy and Fleet Ballistic Missiles" (PhD diss., The Massachusetts Institute of Technology, 1992), 341.
[55] Cote, "The Politics of Innovative Military Doctrine," 346.

space and cyber domains, interservice disputes will likely increase in intensity and ferocity. The environment will continue to push each service into fierce competition, and when the service makes an adjustment to its DOTMLPF, it will provide the catalyst for the rivalry to boil over until it resets itself. Although inter-service rivalries appear to have negative consequences, perception matters since inter-service disputes have different meaning for different actors.

The next chapter continues with the foundational framework of the thesis by describing the German military culture and how it was influenced by a strong Prussian heritage. The chapter also chronicles the decline of the *Luftwaffe's* prestige over the course of the initial years of the war and how it influenced *Luftwaffe* decisions to develop the Fi 103.

Chapter 3

Prussia and Prestige

Tactics reigned supreme in Prussia. The system concentrated on the nuts and bolts of the military profession.
- Holger H. Herwig

Introduction

Colin Grey once wrote, "Germans cannot help but be Germans."[1] At face value his words appear almost meaningless, but when one begins to assess the German military culture during WWII, a deeper meaning to his words quickly emerges. Perhaps his statement would have been more accurate had he said, "Germans cannot help but be Prussians" due to Prussia's powerful and enduring influence on German military culture. This powerful influence, along with the role of inter-service rivalry and numerous other factors that degraded the *Luftwaffe,* provided the impetus for the *Luftwaffe* to develop the Fi 103 in an attempt to re-establish its own prestige and that of Germany.

This chapter continues to lay the foundations for the ferocity of the inter-service rivalry and the development of technological innovations at Peenemünde. It first illustrates that Prussian influence shaped the German military culture, which provided a sense of deep pride and nationalism in the fatherland as well as a source for latent aggression. The second portion of the chapter discusses the factors that led to the *Luftwaffe's* decline and why it was incapable of protecting German cities from the onslaught of Allied airpower. When the German military culture and inability to defend the fatherland are coupled with the fierce inter-service rivalry between the Luftwaffe and the German army that was discussed in the previous chapter, the reasons for the development of the Fi 103 and A-4 rockets—the so-called "terror weapons"-- becomes much clearer.

[1] Colin Grey, "Strategic culture as context: the first generation of theory strikes back," *Review of International Studies* (1999), 25, 49–69, 55

Prussian Influence

Ironically, for all of the influence that Prussia wielded in the German military as well as with other nations throughout the world, Prussia was not a nation. Although Prussia was the most powerful and largest state within the German empire and later the Weimar Republic, it never aspired to become a nation and was content with its current status.[2] For all of its efforts during the Napoleonic Wars and in fighting three swift, decisive wars against Denmark, Austria, and France between 1864 and 1871 that accompanied the process of German unification, Hitler dissolved it in 1935 when he formulated a German national state.[3] Although the state of Prussia no longer existed, the Prussia's influence had already permeated the German military, as well as other militaries in the world, during the latter half of the preceding century.

To see why the Prussian military overwhelmingly influenced German military culture, one does not have far to look. Prussian military campaigns, their military education system, great officers, and organizing principles display a strong and proud military heritage. The military successes are easily discernible. Victories over Napoleon at Leipzig and Waterloo; quick and decisive mid-19th century triumphs over Denmark, Austria, and France; as well as a "near victory" against overwhelming odds in World War I establishes a trend that victory is still possible when up against what appear to be insurmountable odds.[4] Well known for their tenacity, Prussian armies were formidable adversaries.

The Prussian military education system and the *Kriegsschule* were just as noteworthy. Academically rigorous and demanding, the educational system produced tactically proficient and well-educated officers. There should not be any shock in that. When the "icon" himself, General Carl von Clausewitz, was the director of the academy and oversaw and ensured that the educational system was befitting a Prussian officer, only the best and brightest would have gained entrance to the school. In fact, one scholar noted that Prussian officers from cadet to corps commander must have felt harassed by the army system due to numerous hurdles: entrance and term exams, written and oral exams,

[2] Christopher Clark, *The Rise and Downfall of Prussia* (London: Penguin Group, 2006), 556.
[3] Clark, *The Rise and Downfall of Prussia*, 556.
[4] Holger W. Herwig, "The Prussian Model and Military Planning," *Joint Forces Quarterly*, 67-75, Spring, 1998, 67.

and field exams that measured tactical proficiency.[5] A plethora of military leaders benefited from the academic rigor and went on to greatness.

Extraordinary leadership attributes placed leaders such as Helmuth von Moltke and Erich Ludendorff, to name only two, in the pantheon of Great Prussian Captains. For example, Moltke implemented A*uftragstaktik*, later to become the pre-eminent command and control mechanism for the German Army. Directing that subordinates operate within his intent, Moltke's innovativeness spurred leaders to think independently.[6] Superior leadership is hard to replicate, but systems that support the commander can be, and it was not long before the rest of the world took notice of the Prussian General Staff system. Led by General Gerhard von Scharnhorst and August von Gneisenau during the Military Reform Movement, the *Grosser Generalstab*—Great General Staff—aimed to place intellectually strong officers near mediocre generals that provided, "the talents that otherwise might be wanting among leaders and commanders."[7] Having seen the prowess of the Prussian military, Germany was not the only nation to adopt its practices and by the end of the nineteenth century most countries—including the United States-- had to some extent adopted the Prussian General Staff model.

The Prussian system was so strong that much of its influence remains within the US military today. Drill and ceremony, taught to every individual entering the armed services, is traceable to Baron von Steuben, a Prussian General and the Continental Army's Inspector General. He instituted drills from his *Regulations for the Order and Discipline of the Troops of the United States*, also known as the "Blue Book."[8] Although very few are aware, the discipline and drill that is taught to new recruits is essentially the same that von Steuben provided to the continental army.

Denoting the powerful influence of its Prussian heritage, one historian noted that the military under Hitler was "truly German."[9] Because of the substantial influence, perhaps a more accurate statement may have been that Hitler's military was truly Prussian. The

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[5] Herwig, "The Prussian Model and Military Planning," 68.
[6] Werner Widder, "Auftragstaktiks and Innere Fuhrung," *Military Review* (Sept/Oct 2002), 3-9, 4.
[7] Max Boot, *War Made New: Technology, Warfare, and the Course of History, 1500 to Today* (New York: Gotham Books, 2006), 122.
[8] Alexander Hamilton, *The Papers of Alexander Hamilton Volumes 1-26*, edited by Harold C. Syrett (New York: Columbia University Press, 1966), 501.
[9] Helmuth Graf von Moltke, *Moltke on the Art of War*, edited by Daniel J. Hughes (Toronto: Ballantine Books, 1993), 3.

continuity in values, military thought, systems, and institutions from the Prussian to the German armies created a common reference point to a Prusso-German Army that, aside from technological advances and other obvious differences such as uniforms, greatly resembled its Prussian forebear.[10]

Assessing German military culture will offer insight into the many norms and values that influenced the behavior of the Army and the *Luftwaffe* at Peenemünde. Military culture represents the ethos and professional attributes, both in terms of experience and intellectual study that contribute to a common core understanding of the nature of war within military organizations.[11] Simply put, the synthesis of past experiences in conflict and theories on war with norms and values forms the crux of military culture. There are problems with military culture: it is not an exact science and often appears complex and obscure. Furthermore, cultures can change over time. That could be problematic; as one senior Marine has noted, military cultures are like great ocean liners or aircraft carriers in that they require an enormous effort to change direction.[12] Colin Gray noted that culture is a powerful undercurrent that strongly affects behavior.[13] Indeed, a military culture that possessed substantial Prussian influence produced powerful institutions which had been ingrained in the psyche of almost every member of the *Wehrmacht*. Two Prussian institutions stand out more strongly than others as being the most influential to the German military culture: the notions of *Beruf* and *Angriffsgeist.*

The first institution was that of *Beruf:* the sacred notion that every individual has a greater, almost mystical calling. There are no words in the English language entirely equivalent to the word *Beruf* although "calling" comes close. In his *The Protestant Ethic and the Spirit of Capitalism*, Max Weber asserted that *Beruf* originated in Luther's translation of the Bible and then spread throughout the Germanic world.[14] In 1918, James H. Baker, who was the President of the University of Colorado at the time, captured the

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[10] Helmuth Graf von Moltke, *Moltke on the Art of War*, edited by Daniel J. Hughes (Toronto: Ballantine Books, 1993), 3.
[11] Williamson Murray, "The Future of American Military Culture: Does Military Culture Matter?" *Orbis*, Winter 1999, 27-42, 28.
[12] Murray, "Does Military Culture Matter," 29.
[13] Colin Gray, "Strategic culture as context: the first generation of theory strikes back," *Review of International Studies* (1999), 25, 49–69, 55
[14] A.E. Sokol, "The Conception of a Calling in the German Literature of the Middle Ages," PMLA, Vol. 50, No. 1 (Mar., 1935), pp. 1-13, 1.

essence of *Beruf* when he wrote on the relationships between the people, Prussia, and the military:

> Much of the German philosophy views the state as the instrument of the Universal Will in the eternal progress—a conception that exalts patriotism. The Emperor rules by divine right, is answerable only to God, the Prussian god, partial to his chosen people. Officials are trained to loyalty and obedience. Higher education prepares for public service in the departments of justice, medicine, and instruction. Everything is woven into the fabric of the state. The history of the people is glorified, their mission is proclaimed, their culture must extend throughout the world. The military system enforces loyalty to the Emperor and the fatherland. Allegiance is imperative, obedience must be unquestioned, devotion to the state is, first and last, the duty of every citizen.[15]

Within the idea of *Beruf*, there are certain obligations of every individual: self-sacrifice; abandoning personal and egoistic goals in order to obtain the goals of the national community, and the prized place of duty and its execution with devotion and unrelenting thoroughness.[16] Baker authored his anecdote in 1918 but the essence of *Beruf* is also found in much earlier works. The 1761 Prussian publication *On Death for the Fatherland* advocated developing such a strong love for the homeland that it abolished fear and sanctified death in battle.[17]

From *Beruf*, Germans acquired a sense of duty to serve their nation in whatever capacity they could muster, whether as a member of the military or in some other fashion that contributed to the nation's greater good. The strong sense of duty that permeated society cannot be underestimated. Discussing the degree to which Germans were faithful to their nation, one observer described the German people as "animated by a sense of duty and an earnest devotion to work which are hardly to be surpassed in the world."[18] Especially evident in the military, a soldier's duty was an "iron necessity" bound by his moral obligation to his nation and to fight for whatever cause his leaders championed.[19] This is not surprising as Moltke the Elder, a Prussian officer, wrote that one of the noblest

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[15] James H. Baker, *After the War-What?* (Boston: Stratford Publishers, 1918), 81.
[16] David Stone, *Fighting for the Fatherland: The story of the German Soldier from 1648 to present day* (Dulles, VA: Potomac Books, 2006)366.
[17] Clark, *Iron Kingdom: The Rise and Fall of Prussia, 1600-1947*, 221.
[18] Sidney Whitman, *Imperial Germany: A critical study of fact and character* (New York: Chetauqu Century Press, 1897), 294.
[19] Stephen Fritz, *Frontsoldaten: The German Soldier in WWII* (Lexington, KY: University of Kentucky Press, 1997), 190.

virtues of men was their devotion to duty.[20] The dominant figure in the German military during the inter-war period that typified the professional soldier was General Hans von Seeckt who organized the German Army during the Weimar republic. Capturing the essence of Beruf, von Seeckt noted that each "soldier's duty consists in obedience."[21]

Another tenet of *Beruf* is esprit de corps, of which another Prussian officer, Carl von Clausewitz wrote in his magnum opus, *On War*.[22] Clausewitz, who Peter Paret referred to as a "servant of Prussian ethos of work and duty," understood the concept of *Beruf* and realized that it was the synthesis of nationalism and pride.[23] Esprit de corps was the necessary companion to duty which instilled a powerful sense of selfless service and loyalty within the entire German military. These virtues are encapsulated in the military values of duty, honor, and country that were originally coined by Sylvanus Thayer, the father of the United States Military Academy at West Point, an avid reader of the Prussian way of war.[24] He may have generated his three words after reading of *Beruf* in a statement along the lines of, "It is the *duty* of every German to *honor* his *country* with service." B*eruf* remained inculcated within the German military during the interwar period as it rearmed, and could be expressed in the German military's mantra of *mission first.* No matter how arduous a task may be, the German soldier would accomplish it for the Fatherland and national pride.

The second Prussian institution to permeate the entire German military was the notion of *Angriffsgeist*—the spirit of attack. In 1940 Dr. Robert Rosinki opined that *Angriffsgeist* was the most precious heirloom of the German Soldier.[25] An underlying tenet of *Angriffsgeist* is aggressiveness, which subordinates must possess if they are to achieve success. In his book, the *German Way of War*, Historian Robert Citino contends that the military culture of the German Army supported and rewarded offensive spirit in its

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[20] Count Helmuth von Moltke to Johann Kaspar Bluntschli, letter, December 11, 1880. In this letter to the international law expert, Johann Kaspar Bluntschli (1808-81), Count Helmuth von Moltke expressed his philosophical views on the necessity of war. Moltke's actual words were: "war is part of God's world-order. Within it unfold the noblest virtues of men, courage and renunciation, loyalty to duty and readiness for sacrifice--at the hazard of one's life."
[21] Samuel Huntington, *The Soldier and the State* (Cambridge, MA: Belknap Press, 1957), 111.
[22] Clausewitz, *On War*, 187.
[23] Peter Paret, *Clausewitz and the State: The Man, his Theories, and the Times* (Princeton, NJ: Princeton University Press, 2007), 6.
[24] James W. Kershner, *Sylvanus Thayer: A Biography* (New York: Ayer Publishing, 1982), 404.
[25] Robert Rosinki, *The German Army* (Berkely, CA: University of California Press, 1944), 190.

subordinate leaders.[26] After all, Moltke the elder had shown that such a spirit in the army was needed to win wars decisively. Knowing the importance of aggression in war, General Walther von Brauchitsch the German Army's commander, wrote in a memo to Hitler "The aggressive spirit of the German infantry was sadly below the standard of the First World War..." after learning of the Blitzkrieg offensive.[27] Even Hitler commented that the importance of the *Luftwaffe* in his campaign plans required its officer corps to be inculcated with the "spirit of attack."[28] He likely came to this realization after reading Rommel's book, which he highly prized.[29] In 1937 Rommel had authored a book based on his experiences during the First World War and aptly titled it *Infanterie Greift An*, Infantry Attacks.

Isabel V. Hull makes an argument similar to Citino's but carries it even further. Hull argues that the German army developed a uniquely violent and genocidal military culture, characterized by institutional extremism, which she referred to as *Vernichtungskrieg*, the doctrine and warfare of annihilation.[30] Whether the German military culture was as extreme as she contends is certainly debatable; however, there is plenty of evidence that suggests aggression was an important factor to the German military. After all, Henry Stimson, the Secretary of War under President Roosevelt, accused the German people of not only being aggressive but having an aggressive nature.[31]

The essence of *Angriffsgeist* was eloquently captured by fighter ace Adolf Galland in his memoir: "Only the spirit of attack born in a brave heart will bring success to any fighter aircraft, no matter how highly developed it may be"[32] The notion that there must be a relentless pursuit of the offense fostered an increased sense of aggressiveness that was evident in many of the Prussian and German officers. For example, Frederick the Great advocated attacks on the enemy "even if he should be on top of the hill;" an

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[26] Robert Citino, *The German Way of War* (Lawrence: University Press of Kansas, 2008), 236.
[27] "Polish Theater: Blitzkrieger" *Time Magazine*, September 25, 1939.
[28] Irving, *Hitler's War*, 20.
[29] David Fraser, *Knight's Cross: A Life of Field Marshal Erwin Rommel* (New York: Harper Collins, 1994), 98.
[30] Isabel Hull, *Absolute Destruction: Military Culture and the Practices of War in Imperial Germany* (Ithaca, NY: Cornell University Press, 2006), 28.
[31] Frank Trommler and Joseph McVeigh, *America and the Germans: The relationship in the Twentieth Century* (Philadelphia: University of Pennsylvania Press, 1985), 76.
[32] Adolph Galland, *The First and the Last: the German Fighter Force in World War II* (London: Methuen Publishing 1955), 59.

arduous task for armies that moved by foot and transported equipment with horses.[33] Several centuries later during WWII, Field Marshal Erwin Rommel epitomized *Angriffsgeist* with his aggressive tactics applied in armored warfare against the allies in North Africa. Only through the relentless pursuit of the offense could a commander achieve what Clausewitz wrote as "the principal way to achieve our object" in war which was the "destruction of the enemy forces."[34]

Perhaps the clearest manifestation of *Angriffsgeist* is in the German conquest of Poland and France during the *Blitzkrieg:* lightning war that focused on short and sharp decisive battles to overcome an adversary. Although many have thought that Blitzkrieg originated in order to avoid trench warfare, the concept of short and quick decisive wars was first instituted by Moltke the Elder.[35] Moltke, who obviously did not possess aircraft and armored vehicles, did possess trains and intended to use them to the fullest to speed his movement to the adversary's location. In fact Moltke, who was an advocate of the train system as a part of strategy development and a means of transportation, actually invested in the Berlin-Hamburg rail line when it was first developed.[36]

Clausewitz's discussion of technology in *On War* is notoriously absent and the German Army during the inter-war period has been criticized as "techno-phobic" however the Germans did in fact have a penchant for developing technologically advanced weaponry.[37] The combination of *Angriffsgeist* and *Beruf* provided the impetus to the officer corps to develop weapons for the "German way of War," which according to the 1921 German Army Regulation 487, *Leadership and Battle with Combined Arms,* emphasized a focus towards mobility and maneuver with technologically advanced weaponry, which gave rise to *Bewegungskrieg*—the war of movement. [38]

The combination of *Angriffsgeist* and *Beruf* created military officers endowed with an overwhelming sense of pride, loyalty, and obedience to Germany as well as an aggressive

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[33] Citino, *The German Way of War*, 103.
[34] Clausewitz, *On War*, 258
[35] Samuel J. Newland, *Victories are Not Enough: The limitations of the German Way of War* (Carlisle Barracks, PA: The Strategic Studies Institute, 2005), 4.
[36] Hajo Holburn, "The Prusso-German School: Moltke and the Rise of the General Staff," edited by Peter Paret, *Makers of Modern Strategy* (Princeton, NJ: Princeton University Press, 1986), 287.
[37] Murray, Williamson. "Military Adaptation in War." Institute for Defense Analysis, 2009, 2-27.
[38] James S. Corum, "A Clash of Military Cultures: German and French Approaches to Technology Between the World Wars," A Paper published for the 1994 USAF Academy Symposium. 1994. Page 18.

spirit that provided a high degree of ferocity towards achieving goals and objectives, especially those in support of the fatherland. These virtues, which were instilled in almost every German officer, inflamed the already bitter rivalry between the *Luftwaffe* and the Army and provided the impetus for the Army's continued development of the A-4 despite numerous setbacks, as well as the *Luftwaffe's* development of the Fi 103 purely out of competition. The most prominent members of the German military that exhibited behavior indicative of the German military culture was the officer corps, specifically those in charge of the A-4 and Fi 103 programs.

No one else within the Third Reich was as responsible for developing the *Luftwaffe* into such a powerful force as was Erhard Milch. After returning to serve the Fatherland at the request of Goering, by 1940 Milch had achieved the rank of Field Marshal, was Goering's deputy in the *Luftwaffe*, and was responsible for Germany's production of military aircraft and, after November 1941, of their technical development. Relying on his experience as the director of Lufthansa, Milch developed the *Luftwaffe* from a fledgling air service into a formidable power. Although he had resigned from the air service in 1920 and was scornful of the Prussian officers in the Wehrmacht for their obstinacy, Milch was a product of German military culture and exhibited the same Prussian virtues which had been culturally ingrained in him since he first served in the artillery and later the German air service on the Eastern Front.

Milch possessed a very strong personality and was energetic with unbridled ambition while he served as the State Secretary in the Air Ministry.[39] His energy fueled his tenacity towards directing the *Luftwaffe* in a positive direction, and as soon as he took over from his predecessor Ernst Udet, who had been overwhelmed by his job and committed suicide, he immediately made numerous changes. Milch's passion for the Luftwaffe and its airmen were evident when he openly wept after hearing that *Luftwaffe* troops trapped in the Stalingrad pocket had "signed off" while Russian troops were breaking in their door to get inside.[40] His animosity towards the Army was also evident. At one point when the Fi 103 program was about to be shut down in favor of manning the Army's A-4 program, Milch coldly pointed out that if anyone tried to do such a thing he

[39] AFHRA Command and Leadership in the German Air Force (K) Report No 174, no date, typed transcript, 512.6521, in USAF Collection, Historical Research Agency, Maxwell AFB, Alabama,
[40] Irving, *The Rise and Fall of the Luftwaffe*, 219.

would have them arrested.[41] Von Braun could attest to the fear that was produced when arrested by the Gestapo. Sarcastically he stated that his experience in a Gestapo jail was "naturally unpleasant."[42]

Milch's sense of nationalism for his beloved Germany was by far the strongest of any leader that possessed influence over developments at Peenemünde. His obligation to fulfill his commitments to Germany were illustrated in a speech to his staff: "All of us are bound to one common aim—winning this war…I could not care less if every Dutchman froze, drowned or starved to death, so long as Germany's future is assured. You may think this unadulterated selfishness, to think only about one's own country. But it is our task and our duty."[43] Milch's remarks were reminiscent of *On Death for the Fatherland*, the 1761 Prussian publication which stated "I do not hear the call of my relatives, but only that of the fatherland, not the din of the fearful weapons, only the thanks that the Fatherland sends me."[44] Milch's sense of German nationalism, from which sprang the final solution to exterminate the Jews, was remarkable because Milch was part Jewish and Goering was aware of it!

Walter Dornberger was the Army officer in charge of A-4 development during the war and had served in the Army since enlisting in 1914. Although he possessed a science background after earning a degree from the University of Berlin, Dornberger was a career military officer who served over four decades due to his love of Germany. Although there are numerous references to Dornberger as a dreamer of space exploration, Dornberger clearly articulated what his efforts in the rocket business aimed to achieve in a speech he gave to nearly 6,500 employees at Peenemünde in June of 1943: "the Third Reich was only fighting for security in Europe so that German children will have better living conditions than we did, and so that no European state is ever in the position, out of envy or mistrust, of plotting a war against us all…henceforth the task of the German armaments industry, which is organized for total war, as well as coordinated Europeans, to struggle against this foe."[45] A sense of cold realism overtook Dornberger's comments

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[41] Irving, *The Mare's Nest*, 81.
[42] Michael Neufeld, *Von Braun* (New York: Vintage Books, 2007), 172
[43] Irving, *The Rise and Fall of the Luftwaffe*, 177.
[44] Clark, *Iron Kingdom: The Rise and Fall of Prussia 1600-1947*, 221.
[45] Michael B. Petersen, *Missiles for the Fatherland* (Cambridge, England: Cambridge University Press, 2009), 101.

as he continued to speak to the massed crowd on the importance of the struggle against the enemy: "They [Germany's enemies] want to come. Well, let them come. We will give them a proper reception. So that we can do so, so that we can pay them back for all of the damage they have done to Germany and European nations, it is essential that the German armaments industry works continuously in order to put the best weapons in the hands of the best soldiers in the world…we wish to pay the English back for the terrible sorrow that they have caused to [Germany], especially our women and children, through their terror attacks."[46] Dornberger knew of the consequences if his program was unsuccessful, since he spent the final two years of WWI in a French prisoner-of-war camp.[47] Providing the Germans with the capability to attack their adversaries at the time or location of their choosing, a rocket's capabilities nested neatly into the *Angriffsgeist* way of war.

Dornberger's hostility towards the *Luftwaffe* was also evident in his comments. Although he wrote in his book that he and his team worked with the *Luftwaffe* in the closest bonds of camaraderie, his description of their relationship was a poor assessment.[48] Dornberger demonstrated his disdain for the younger service and his aggressiveness to see his program "win" when he began to discuss the rocket as a decisive weapon of war in order to gain the necessary resource commitment that A-4 production required. Prior to 1943, Dornberger had never made such flagrant claims and stated that the rocket was primarily a replacement for the infamous Paris Gun developed during WWI.[49]

Wernher von Braun, the civilian director of the rocket program, was a very complex individual who was a member of the notorious SS, an academic prodigy with a brilliant mind, and from a lineage of Prussian nobility.[50] Michael Neufeld regarded Von Braun as a twentieth century Faust who sold his soul for eternity in order to improve mankind through the exploration of space; von Braun was even fond of quoting Goethe in which Faust expressed a desire to fly through the heavens.[51] Von Braun certainly was interested in space travel, but he was also aware that in order to continue his research and rocket

[46] Petersen, *Missiles for the Fatherland*, 101.
[47] Dennis Piszkiewicz, *The Nazi racketeers: Dreams of Space and crimes of War* (Lansing, MI: University of Michigan Press, 1995), 20.
[48] Walter Dornberger, *V-2* (New York, NY: The Viking Press, 1954), 79.
[49] Dornberger, *V-2*, 47.
[50] Neufeld, *Von Braun*, 55.
[51] Neufeld, *Von Braun*, 5.

development his military program needed to be successful. Success meant that Germany would win the war.

Although von Braun consistently denied that he took an active role in Nazi party politics, his sense of duty ingrained from *Beruf*, instilled German nationalism deep within him. Von Braun's comments in 1972 confirm his pride in the fatherland: "I deeply and sincerely regret the victims of the rockets; but there were victims on both sides. I repeatedly raised protests against the misuse of the rockets as tools of destruction. But war is war, and since my country found itself at war I had the conviction that I did not have the right to bring moral criteria into the matter. My obligation was to help win the war, whether I had sympathy for the government or not. I had none."[52] Von Braun was clearly lying regarding his protests over the use of the rockets, since he had worked on the program since its genesis and would have been well aware of its intended use. A line in a memo he wrote in 1937 regarding the A4 confirms this: "the liquid-fuelled rocket ultimately intended for military use will be about twice as long as A3, about forty-two feet long instead of twenty-two."[53] Furthermore, with von Braun's intelligence, he would have surely pieced together that Dornberger had assisted in the development of the Paris Gun and was now working on rockets. That Dornberger was hired by Becker due to their past associations with the gun was common knowledge.

These three men were aware that Germany was losing the war and they undoubtedly knew of the allied bombing of German cities that was happening on almost a daily basis. Their sense of nationalism and ferocity imbued by *Beruf* and *Bewegungskrieg* increased the competitive spirit within the German inter-service rivalry and drove them each to develop weapons to gain back Germany's glory.

The Loss of Prestige

Initially, Hitler thought very highly of the *Luftwaffe* and believed it to be a major factor in Germany's *archi-prêts* for war.[54] The first *Luftwaffe* air power doctrine issued by General Wever in 1936 certainly supported this notion: "Air power carries the war right into the heart of the enemy country from the moment war breaks out." Alluding to a Douhetian concept, it further stated, "[Air power] strikes at the very root of the enemy's

[52] Petersen, *Missiles for the Fatherland*, 101.
[53] Irving, *The Mare's Nest*, 19.
[54] Irving, *The Rise and Fall of the Luftwaffe*, 84.

fighting power and of the people's will to resist."[55] Although the Luftwaffe was relegated to primarily a ground support role, the first campaign victories seemed to reinforce these doctrinal assertions. As one historian pointed out, if there had ever been any doubts about the *Luftwaffe's* ability to provide tactical support to the Army, they were quickly dispelled after 1939 and 1940.[56]

Hitler was not the only senior leader who reveled in the thought of what air power could bring to Germany. Hermann Goering was also lured by its seductive qualities and noted that to achieve German victory, "Air power holds the key…" Furthermore, Erhard Milch, the State Secretary for Air and second in command behind Goering, gloated over the efficacy of German air power: "Wars can only be won by air power. You will lose every war, in fact, if you do not have air superiority—not in all God's skies, but where you need it, in the *Schwerpunkt*. For ground forces without air superiority or air supremacy it is impossible to attain victory."[57] There was no doubt that Hitler and the senior leadership held the *Luftwaffe* in high regard. In fact, the *Luftwaffe* held itself in high regard. The *Luftwaffe* wanted only men "willing to risk life and limb for the Führer and Folk."[58]

The allies also respected and feared the *Luftwaffe.* Its power warranted devoting substantial intelligence resources towards the collection effort. As a British OSS officer wrote in his diary, "During the course of the war no aspect of intelligence received wider, more continuance, and more devoted attention, than the German Air Force and within it, German aircraft production. It was recognized early that aircraft production bore a more immediate and direct relationship to fighting value at the front line than any other armament production."[59] A laudable effort; however, there was far more to the *Luftwaffe* than the allies could discern through normal collection channels.

Once thought to be the crown jewel of the *Wehrmacht*, the *Luftwaffe's* performance gradually declined, and with it the air force's privileged position. Its decline can be attributed to a plethora of complex issues: inadequate preparations, myopic doctrine, a

[55] Irving, *The Rise and Fall of the Luftwaffe*, 84.
[56] Overy, *The Air War*, 44.
[57] David Irving, *Goering A Biography*, 55.
[58] "How do I become an Officer of the Luftwaffe?" In USAF Collection, Historical Research Agency, Maxwell AFB, Alabama, Page A-4.
[59] Rostow Report, *War Diary*, Vol. 5, R&A Branch, OSS (Sep 42 – Apr 45, typed transcript, 520.056-167, in USAF Collection, Historical Research Agency, Maxwell AFB, Alabama, P. 62

lack of airmindedness, poor senior leaders, minimal allowance for the regeneration of combat power due to over-extension, and Hitler's schizophrenic grand strategy. Blinded by their extreme arrogance and the notion of Aryan supremacy, the *Luftwaffe's* decline was self-inflicted, and thus preventable.

Although not a primary factor, German doctrine also contributed to the demise of the *Luftwaffe.* Predicated on a series of short inexpensive wars, German doctrine primarily consisted of *operativer Luftkrieg*, a close integration of airpower with ground forces.[60] Subsequently, Germany did not possess adequate resources that a military required to conduct sustained operations such as night bombers, bombs larger than one thousand pounds, air torpedoes, modern mines, modern armament, and advanced bombsights.[61] Due to Germany's geographic location, its doctrine did not support the requirement for a strategic bomber although Walther Wever, the *Luftwaffe's* first Chief of Staff, did advocate the development of a large strategic bomber until he was killed in a 1936 crash. Wever's idea of a large German bomber was briefly kept alive by his replacement, Albert Kesselring, but ultimately the heavy bomber succumbed to a lack of available resources and Hitler's misconceptions about bombing—one of which was that a medium sized bomber could easily replace a heavy strategic bomber.[62] Later in the war, the Germans' lack of a heavy bomber was another catalyst that fueled the fire between the Army and the *Luftwaffe* at Peenemünde.

Hitler's decision to initiate *Blitzkrieg* against Poland in 1939 was three years premature. When Germany invaded Poland, the *Luftwaffe* was not ready for combat and did not have many of the essential capabilities to conduct a prolonged and sustained offensive.[63] Lacking adequate reserves and not possessing large stockpiles of industrial materials and resources such as aluminum, magnesium, or rubber had a profound impact. Even the air industry's capacity at the time was only twenty-five percent of what it would later become. When Hitler initiated the war early, the *Luftwaffe's* lack of preparation led to heavy losses. Although the initial campaigns were quick victories, the *Luftwaffe* suffered high casualties and lost numerous aircraft—many of which were due to

[60] Richard Muller, "Close Air Support," *Military Innovation during the Interwar Period*, Edited by Williamson Murray and Alan Millet (Cambridge, England: Cambridge University Press, 1996), 160.
[61] Irving, *The Rise and Fall of the Luftwaffe*, 91.
[62] Overy, *The Air War*, 103.
[63] Overy, *The Air War*, 25.

shortened training times and general unpreparedness. Aircrews require adequate training and flying time to hone their skills, and cannot be quickly replaced. Not long after the war started, the *Luftwaffe* soon began to sacrifice training time in order to replenish aircrews on the front lines.

Hitler's lack of accurate battle damage assessments also contributed to the *Luftwaffe's* decline. Senior leaders, well aware of the negative reports documenting losses coming from the front lines, were not always forthcoming with bad news.[64] Hitler, known well for his rants, was difficult to speak with at times. Richard Overy recorded on one occasion that Hitler bellowed, "The entire *Luftwaffe* command should be hanged immediately!"[65] Providing bad news to the *Führer* was not an issue to be taken lightly. Unaware of many of the losses, Hitler pushed his forces harder because he did not possess accurate information. The *Luftwaffe* felt the repercussions of these decisions for years to come.

Hitler's lack of operational aviation experience was another issue with which the *Luftwaffe* leadership had to contend. His only military experience consisted of duty as an Army corporal during WWI and his lack of familiarity with aviation issues inhibited his comprehension of aviation logistics, maintenance, and training issues.[66] As one historian stated, Hitler was out of touch and isolated from air affairs and ignorant of air strategy and planning.[67] A damning verdict, but it accurately portrays an individual devoid of the intellectual resources and experience needed to manage and run an industrialized nation's air assets. Starting the war early, inaccurate information, a lack of situational awareness, and a poor understanding of aviation issues led Hitler to press the *Luftwaffe* beyond its capabilities, thereby decreasing its combat effectiveness.

Leadership was another major factor that contributed to its demise and loss of prestige. Sociologists have noted that leaders in authoritarian regimes often possess considerable power stemming from their personal relationships and ability to build power and prestige within the organization—an accurate assessment of Nazi senior leadership.[68] The *Luftwaffe,* containing a considerable number of sycophants who gained power

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[64] Overy, *The Air War*, 32.
[65] Overy, *The Air War*, 131.
[66] William L. Shirer, *The Rise and Fall of the Third Reich* (New York, NY: Simon and Schuster, 1990), 30.
[67] Overy, *The Air War*, 103.
[68] Gareth Morgan, *Images of Organization* (Thousand Oaks, CA: Sage Publications, 2006), 152.

through their personal relationships, was full of men concerned more with looking good then being good. Williamson Murray, an expert on the *Luftwaffe,* characterized its leadership as "incapable of thinking for the long pull."[69] An astute characterization, the *Luftwaffe* needed deep thinking strategists instead of men seeking personal glory.

Hermann Goering, the number two man in the Third Reich and commander of the *Luftwaffe,* was one such individual. Murray portrayed Goering as a man with a "mental framework…of a squadron-level fighter pilot…ignorant of supply, logistics, strategy, aircraft capabilities, technology, and engineering—in other words, just about everything having to do with airpower."[70] What Goering lacked in experience and common sense, he made up for with anti-Semitism, poor leadership, dismal managerial skills, and nonexistent strategic foresight. Goering, who was more concerned with his personal conquest for prestige and power, contributed more to the *Luftwaffe's* demise and loss of prestige than any other leader in the *Luftwaffe.*

Prior to the war Goering, in his capacity as the head of the air ministry, determined the direction for industrial and technological advancements. He disliked dealing with the highly technical matters of aircraft maintenance and production and did not put much thought into the decisions he made. In fact, many of Goering's decisions were simply echoes of Hitler's will; Goering's refusal to analyze the Führer's directives provided a lack of direction to the poorly led air industry. One such decision occurred early in the war. On 7 February 1940, Goering signed a decree that would have disastrous effects on the *Luftwaffe*. The order stopped all Luftwaffe developmental in order to prioritize aircraft that only showed promise of "[completion] in 1940 or …1941 at the latest."[71] The decision effectively stopped technological development of advanced aircraft until later in the war when it was too late to have any impact. Historian Eric Larrabee commented that Goering's decision was one of the "most successful contributions to Allied Victory" during the war.[72]

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[69] Williamson Murray, *Strategy for Defeat: The Luftwaffe 1933-1945* (Maxwell AFB: Air University Press, 1983), 20.
[70] Murray, *Strategy for Defeat*, 5.
[71] Eric Larrabee. *Commander in Chief: Franklin Delano Roosevelt, His Lieutenants, and Their War*. (1st ed. New York: Harper & Row, 1987), 232.
[72] Larrabee, *Commander in Chief,* 232.

Another individual who lacked strategic thinking was Ernst Udet. Chosen to lead the Aviation Technical Office, Udet was a fine actor, cartoonist and noted *bon viveur* but lacked the requisite experience to handle the technical requirements of advanced aircraft. When one of the radar program developers explained to Udet that radar would locate an aircraft in a fifty-kilometer area at night or in fog, he reportedly exclaimed, "If you introduce that thing you'll take the fun out of flying!"[73] Udet, as well as Jeschonnek—another senior officer with a pivotal role in the leadership—committed suicide after succumbing to Goering's *leadership* abilities. Other senior Luftwaffe leaders included a former cigar salesman and a former inmate confined for morphine addiction.[74] In the words of one historian, "incompetence, corruption, and viciousness flowed over the Luftwaffe like a gray, molten, volcanic tide."[75]

Poor decisions, lack of leadership, and the *Luftwaffe's* inability to regenerate considerable combat power proved a significant disadvantage as it entered the Battle of Britain. Historian Edward Westermann observed that when Germany entered the Battle of Britain in 1940, the *Luftwaffe* was already short of pilots and aircraft from its losses in previous campaigns, but its flak arm possessed a numerical strength of nearly half million men—a example of an operationally lopsided military.[76] Hitler's campaigns significantly reduced the *Luftwaffe's* fighting strength and Goering's mishandling of aviation technology ensured that the Germans did not possess another advanced aircraft to replace the Me 109, Ju 88, or the Me 110. During the four-month long battle, German losses greatly exceeded those of the RAF.[77] After the Battle of Britain, the *Luftwaffe* remained powerful but possessed nowhere near the same relative strength it held prior to the onset of the war. Following the Battle of Britain, Hitler turned his attention to the East with Operation Barbarossa—the Nazi conquest of Russia.

The *Luftwaffe's* role in Operation Barbarossa had an ominous beginning. In 1941 when Erhard Milch returned from leave, General Otto Rudel, the *Luftwaffe's* Chief of Air Defense, questioned him whether he had approved the directive not to issue winter

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[73] Edward B. Westerman, *Flak* (Lawrence, Kansas: University Press of Kansas, 2001), 272.
[74] Overy, *The Air War*, 137.
[75] Larrabee, *Commander in Chief,* 233.
[76] Westerman, *Flak*, 108.
[77] Richard Overy, *The Battle of Britain: The Myth and Reality* (London, W. W. Norton & Company, 2002), 131.

clothing for the "new campaign." Goering never notified Milch that Germany was preparing to invade Russia. According to David Irving, Milch "leapt out of his chair overcome with surprise" with "visions of the eastern front—of the slaughter he had witnessed at Gumbinnen, Ossowiez and Raczki during the First World War."[78] Even worse, Rudel was spreading the notion that "it will all be over before the winter sets in."[79] When queried by Milch regarding the source of such an outlandish claim he responded with "it comes on very high authority."[80]

Unbeknownst to either individual, the Russian campaign lasted far longer than the four months that German leadership planned. According to Dr. Rich Muller, Barbarossa "revealed the bankruptcy of Goring's prediction to Adolf Galland and Werner Molders in April 1941" that Germany could redirect the resources from the Russian conquests "into the battle against the western opponent."[81] The conquest of Russia placed a severe strain on the already weakened *Luftwaffe*. Due to previous campaigns and the severe commitment of the Luftwaffe to Barbarossa and the Russian invasion, the *Luftwaffe* had gone through its entire inventory of aircraft in just twelve months.[82] Germany's failed attempt to impose its own *Manifest Destiny* under the slogan "Eastwards the course of Empire" simply became another means which the once powerful *Luftwaffe* was degraded.[83]

Although the Germans held out in Russia for as long as they could, by the fall of 1942, the *Luftwaffe* was severely strained, suffered from shortages in resources, and was extended beyond its capabilities on numerous fronts. Although the Allied invasion was still nearly two years away, Allied airpower had done considerable damage to the German infrastructure. On 14 February 1942, RAF Bomber Command was issued Directive 22 which focused bombing "on the morale of the enemy's civil population and

[78] Irving, *Rise and Fall of the Luftwaffe*, 130.
[79] Irving, *Rise and Fall of the Luftwaffe*, 130.
[80] Irving, *Rise and Fall of the Luftwaffe*, 130.
[81] Dr. Richard Muller and Donald Caldwell, *The Luftwaffe over Germany, Defense of the Reich* (London: Greenhill Books, 2007), 46.
[82] Williamson Murray, "Adaptation in War." Published by the Institute for Defense Analysis, 18 June 2009, 6-22.
[83] H.W. Koch, "Hitler's 'Programme' and the Genesis of Operation 'Barbarossa,' *The Historical Journal*, Cambridge University Press Vol. 26, No. 4 (Dec., 1983): 920.

in particular of the industrial workers."[84] Bombing of German targets would continue through the war and would not ease until after the destruction of Dresden. By October of 1942, Goering was already retiring from the war effort and devoted much of his energy to *acquiring* art and other priceless artifacts from the different corners of Germany's occupied lands. No matter-- Hitler had already lost faith in the *Reichsmarschall* and his once powerful and technologically advanced air force.

Conclusion

According to Michael Walzer, combat contains latent fear and hysteria and presses individuals towards fearful measures and criminal behavior when they are faced by what they perceive as a "Supreme Emergency."[85] As an example, Walzer cited allied terror bombing and argued that since "Nazism was an ultimate threat to everything decent," the ends could justify the means. However, after the allies gained air superiority and Operation Overlord had been deemed a success, were the Germans still an imminent threat? [86] Although much of the German people's resilience can be attributed to *Beruf*, and their fighting spirit remained high, one could hardly claim that they were. What about German reprisals against the United Kingdom and other targets in Europe? Germany was in a supreme emergency indeed and by the time the first weapons were launched, Operation Overlord was a week old and the Russians were nearing Warsaw.

Beruf and *Angriffsgeist* were powerful factors that that drove Dornberger and von Braun onward to produce an operational rocket. Dornberger, who had nobly served his nation in two world wars, was a proud officer that knew what the inside of an enemy prison was like. Von Braun, the aristocratic Prussian, was acculturated within the Army program at Peenemünde. Both saw the effects of allied bombing on German cities and mustered every effort to preserve and protect Germany. Additionally, Milch watched his beloved *Luftwaffe* crash in flames over the course of several years which allowed Germany to suffer greater and more intense bombing as the allies gained air superiority.

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[84] Alan Levine, *The strategic bombing of Germany, 1940-1945* (Westport, CT: Praeger Publishers, 1992), 36.

[85] Michael Walzer, *Just and Unjust Wars* (New York: Perseus Books, 1977), 251. The term supreme emergency is from Winston Churchill's 1939 speech about Britain's predicament. Walzer argues that within the political rhetoric is a fear that is far beyond the ordinary fearfulness of war and thus, there is a danger to which that fear corresponds a certain measure that can be taken.

[86] Walzer, *Just and Unjust Wars*, 254. Walzer argues that danger must be imminent to warrant such drastic measures even though the conflict may contain the severity of a "Supreme Emergency."

His obligation to the fatherland coupled with the ferocity of the inter-service rivalry was a powerful motivation to develop and produce the Fi 103.

The next chapter is the narrative of events starting in 1936 when Peenemünde was first established. The chapter ties in many of the foundational issues discussed in chapters 2 and 3 and it concludes with the addition of the SS to the rocket program near the end of the war. The addition of the SS did not end the rivalry, but only changed some of its dynamics.

Chapter 4

Prejudice and Peenemünde

The following points may be deemed of decisive significance in the history of technology: we have invaded space with our rocket and for the first time--mark this well--have used space as a bridge between two points on the earth; we have proved rocket propulsion practicable for space travel.
- Walter Dornberger

It is possible, even probable, that the enemy may be able to launch something else at a longer range and of a different type than the V-1.
- Lord Dudley, Midland Civil Defense Commissioner

Introduction

After the initial German campaign successes between 1939 and 1942, the tide of the war began to turn in favor of the allies. The industrial strength of the US along with its almost limitless strategic resources enabled the allies to rapidly replace losses on the battlefield and maintain persistence in the bombing campaigns against German industry.[1] The Germans did not possess the internal capacity to conduct prolonged campaigns; indeed, the German way of war intended to secure victory quickly and decisively. The strategic resources required to continue development of the technologically advanced V-2 rockets were soon in short supply, and the *Führer's* initial lack of interest in the program did not help the situation. When the *Luftwaffe* introduced the Fi 103, the fierce, pre-existing rivalry between the services escalated into a battle for precious resources in order to save the fatherland from allied destruction.

Additionally, there was a change in German thinking over the efficacy of morale bombing. In the doctrine manual Walther Wever developed for the *Luftwaffe*, *The Conduct of the Aerial War*, he rejected Giullio Douhet's assertions that morale or "terror"

[1] When America entered the war its industrial capacity was only at 30% due to the effects of the Great Depression on the economy. The war effort enabled hundreds of thousands to return to work that had previously been unemployed.

bombing would secure victory.[2] According to James Corum, Wever deemed it "counter-productive" and posited that it would ultimately increase, rather than destroy, the enemy's will to resist.[3] However, while the war continued and the *Luftwaffe's* ability to defend Germany decreased, the ever-increasing destruction of German cities from the air changed German thinking on the efficacy of morale bombing.

This chapter describes the fierce inter-service rivalry between the Army and the *Luftwaffe*. It proceeds chronologically and discusses the motivations behind the development of the Fi 103, the continued struggle for resources, and the German transition to morale bombing while tying in the concepts discussed in the previous two chapters. The chapter concludes with a technical description and operational assessment of the two weapons. This chapter will illustrate that between the start of the war and the moment Germany initiated its barrage of rocket attacks, inter-service rivalry, more than any other single factor, spurred the *Luftwaffe* to develop the Fi 103, which in turn increased the competition between the two services.

The Early Years of the War

The rivalry between the Army and *Luftwaffe* existed prior to the rocket program's move from Kummersdorf to Peenemünde, which was evident during the appropriation of funds for the development of the site on the Baltic coast. In 1936, the *Luftwaffe* provided five million marks to fund the development of Peenemünde. The Army, which was also required to provide funds for the endeavor, was incensed by what they perceived as a pretentious move by the air service. Author Michael Neufeld captured Wernher von Braun's account of Major General Carl Becker's, the Army Weapons Office Chief, disgust, when he learned how much money the *Luftwaffe* had fronted: "General Becker was wrathfully indignant at the impertinence of the junior service. 'Just like that upstart Luftwaffe' he growled. 'No sooner do we come up with a promising development then they try and pinch it!' 'But they'll find that they're the junior partners in the Rocket business!' 'Do you mean' asked Colonel von Horstig in astonishment, 'that you propose

[2] James Corum, *The Luftwaffe: Creating the Operational Air War, 1918-1940* (Lawrence, KS: Kansas University Press, 1997), 146.
[3] Corum, *The Luftwaffe: Creating the Operational Air War,* 146.

to spend more than five million marks on rocketry?' 'Exactly that' retorted Becker. 'I intend to spend six million on top of Richthofen's five!"[4]

Service pride had increased the rocket program's annual funding to what von Braun referred to as "the big time," when it had previously been much lower.[5] With the relatively recent establishment of the *Luftwaffe* as an independent service, Richthofen would have been conscious of the *Luftwaffe's* perception as a newcomer. In addition, given Corum's characterization of Richthofen as an extremely competent but arrogant officer, it is not surprising that he intended to give the army a little snub.[6] Unable to hide his surprise and excitement that the Luftwaffe had agreed to pay half of the project's cost, Dornberger exclaimed, "here was action indeed!"[7] Dornberger would soon learn that there were other costs associated with the program after Becker expressed to him that in order to get more money, "you have to prove that your rocket is of military value."[8]

The rocket program at Peenemünde was intended as a "joint" venture, and the services initially worked together in an amiable relationship. The *Luftwaffe's* effort in support of the rocket venture was met with enthusiasm by those in charge of the Army program, who were impressed by the air force's willingness to advance their cause.[9] Arthur Rudolph, one of the Peenemünde scientists, was amazed at how "new, fantastic, [and] un-bureaucratic" the *Luftwaffe* systems were.[10] Von Braun, in common with many young men with a technical background in those days, was also enamored with the air service and observed that they "were young, enterprising, and receptive, and did not suffer from the hidebound mentalities and masses of red tape which handicapped the Army and Navy."[11] The congeniality between the services would not last for very long.

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[4] Neufeld, *The Rocket and the Reic*h, 50. Wolfram von Richthofen was a *Generalfeldmarschall* (Field Marshal) in the *Luftwaffe* during the war and a distant cousin of the famous Manfred von Richthofen, the famous Red Baron of WWI fame. Manfred von Richthofen was killed in 1918 during a combat flight.
[5] Neufeld, *The Rocket and the Reic*h, 50.
[6] James S. Corum, *Wolfram von Richthofen: Master of the German Air War* (Lawrence, KS: University of Kansas Press, 2008), 34.
[7] Dornberger, *V-2*, 41.
[8] Neufeld, *The Rocket and the Reich*, 33.
[9] Michael B. Petersen, *Missiles for the Fatherland* (Cambridge, England: Cambridge University Press, 2009), 55.
[10] Thomas Franklin, *An American in Exile: The Story of Arthur Rudolph* (Huntsville, AL: Christopher Kaylor Publishing, 1987), 48.
[11] Petersen, *Missiles for the Fatherland,* 101.

The *Luftwaffe's* construction department, which had a reputation for producing lavish yet functional buildings, planned to execute the majority of the construction. Although the services were convivial towards one another, the rivalry was still present. The *Luftwaffe* was soon lured away by other priorities, namely airfield construction, requiring the army to pick up the construction slack.[12]

Although Peenemünde was intended to be a joint facility, when construction ended the services occupied separate facilities in separate locations on the island. The Army occupied Peenemünde-East and the *Luftwaffe* occupied Peenemünde-West, which further alienated the services and reinforced the already prevailing "us versus them" mentality. Subsequently, cooperation between the services was short-lived and the Air Ministry officially separated Peenemünde-West from the joint command on April 1, 1938, after notifying the Army that the 1937-38 payment of 1 million marks into the development and test budget of Peenemünde-East would not be continued. Perhaps the most symbolic representation of the inter-service rivalry was the fence that the *Luftwaffe* erected around Peenemünde West shortly thereafter.[13]

Neufeld acknowledged the existence of the inter-service rivalry but is unwilling to accept that it may have been the primary factor in the decline of interservice cooperation: "separation was neither a direct product of interservice rivalry nor of a *Luftwaffe* policy to assert its independence."[14] Neufeld discounted the powerful influence of organizational identities on inter-service rivalries which exacerbated an environment already wracked by competition. This phenomenon would perhaps have been foreign to Neufeld, who has never served in the military or been a member of a military organization. The following picture depicts the separate locations of the services at Peenemünde:

The Versailles Treaty did not necessarily forbid the rockets, which Dornberger originally conceived as a more powerful extension of artillery; therefore the army was technically within its rights to pursue the rocket systems.[15] Whether or not the program was illicit, secrecy always was a primary concern for the leadership at Kummersdorf and Peenemünde. Becker's order to Dornberger was that "secrecy of the program was

[12] Martin Middlebrook, *The Peenemünde Raid* (New York: The Bobbs-Merrill Company, 1982), 15.
[13] Neufeld, *The Rocket and the Reich*, 63.
[14] Neufeld, *The Rocket and the Reich*, 63.
[15] Edward Westermann, *Flak: German Anti-aircraft Defenses 1914-1945* (Lawrence, KS: University of Kansas Press, 2001), 34.

paramount," which, given the sensitivity of the program and the advanced technology required for rocket development, was a completely sensible approach.[16]

Combined with the decline of cooperation between the services, an environment of secrecy compounded the rivalry.[17] Anthropologists who have studied secret societies or organizations that heavily rely on secrecy have shown that such secrecy is a powerful means of establishing bonds and creating strong loyalties, which in turn results in a sense of increased cohesiveness between the organizational members.[18] As anthropologist Sissela Bok observed, secret societies provide a greater sense of brotherhood and community.[19] Because there was very little or no cooperation between the two organizations, the code of silence that the organizational members adhered to at Peenemünde reinforced the "us versus them" mentality and strengthened the separate identities of the Army and the *Luftwaffe*.[20]

Although the services maintained a minimal relationship in several previously mentioned programs, as the war continued each service entrenched itself in its own program. The army continued its work on the A-4 and the *Luftwaffe* focused on systems such as the He 176 rocket aircraft, the Enzian air defense missile, and various other programs. On 3 October 1942, the Army successfully launched its first rocket. Speaking to a crowd, Dornberger pointed out,

> The following points may be deemed of decisive significance in the history of technology: we have invaded space with our rocket and for the first time—mark this as well—have used space as a bridge between two points on earth; we have proved rocket propulsion practical for space travel. To land, sea, and air may now be added an infinite empty space as an area of future intercontinental traffic, thereby acquiring political importance. This third day of October, 1942, is the first of a new era in transportation, that of space travel…[21]

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[16] Frank H. Winter, *Rockets into Space* (Boston: Harvard University Press, 1990),46

[17] Numerous authors have stressed the importance of secrecy at Peenemünde and elsewhere during the war. Neufeld contends that Secrecy was such an obsession that in early 1935 manufacturers were asked to send shipments to a shadow firm in a town next to Kummersdorf, prior to the move to Peenemünde. Petersen wrote that when Peenemünde opened in May 1937, the daily practice of secrecy at the facility was of fundamental importance.

[18] Petersen, *Missiles for the Fatherland*, 101.

[19] Sissela Bok, *Secrets: On the Ethics of Concealment and Revelation* (New York: Vintage, 1989), 46.

[20] Although the services were unwilling to work on the rocket program together, they did work together to some degree on the *Wasserfall* project. *Wasserfall* was an anti-aircraft missile which was essentially a much smaller version of the A-4 project that the Army was in charge of developing. It was never employed during the war however, like much of the other innovations developed at Peenemünde, it was a precursor to many of the anti-aircraft systems that various militaries developed. It was in fact the first practicable SAM.

[21] Dornberger, *V-2*, 88.

Although at one point space travel was certainly of interest to the Army general, the Germans had been at war for three years and Dornberger had endured numerous setbacks with the rockets. One rocket fell over, almost crushing Albert Speer, the Armaments Minister, and on another occasion a rocket spun out of control and struck the airfield, destroying three *Luftwaffe* planes. [22] During that period, Dornberger was more concerned with the flow of resources to the rocket program then he was with space travel. The statement above, from Dornberger's 1954 book *V-2*, was likely intended to persuade an American audience that, although he was a senior German officer involved with the *Wunderwaffen*, he was more concerned with space travel than with developing weapons. If Dornberger actually did speak those words, he was more concerned with their "political importance" since Hitler determined his funding—an increasingly important factor, especially with the *Luftwaffe's* initiation of the Fi 103 program during the summer of 1942.

The Fi 103 is Born

On 19 June 1942, Milch chaired an Air Ministry meeting consisting of Argus and Fieseler representatives and ordered development of the Fi 103 to proceed forward, and he codenamed the program *Kirschstein*—Cherry Stone. Perhaps sensing that an opportunity was present, the meeting started shortly after Milch witnessed a failed attempt by the Army to launch a rocket.[23] Author and historian Williamson Murray noted that the *Luftwaffe's* focus during the first two-and-a-half years of the war was typical of the German "way of war" as it focused almost exclusively on the immediate military problems confronting the Reich.[24] Murray's observation; the *Luftwaffe* developed the Fi 103 for short term "satificing." It was not tied to a larger strategy, but as was the case with the A-4, certainly had long term consequences.

The primary force behind the development of the Fi 103 was the competition between the Army and the *Luftwaffe* spurred by either actual or perceived threats to the *Luftwaffe's* DOTMLPF.[25] Cote's theory on innovation and inter-service rivalry

[22] Wayne Biddle, *The Dark Side of the Moon* (New York: Norton and Company, 2009), 117.
[23] Neufeld, *Rocket and the Reich*, 148.
[24] Williamson Murray, "Adaptation in War," Published by the Institute for Defense Analysis, 18 June 2009, 6-22.
[25] It is important to note that the *perception* of change was just as powerful as change itself.

provides a powerful explanatory tool for the genesis of the Fi 103.[26] He argued that when services are in conflict over doctrinal roles and missions, competition spurs innovation amongst the services.[27] The Luftwaffe perceived that the A-4 threatened the funding for their own programs; the army would continually encroach on *Luftwaffe* "territory" and infringe on its doctrinal roles and missions; and perhaps most importantly, there was potential that the *Luftwaffe* could even lose its service independence. The Fi 103 was the Luftwaffe's hedge against those threats.

The immense resource requirements that the A-4 required for development threatened to reduce the *Luftwaffe's* funding for its own programs. Milch, who was experienced in aviation matters, knew that resources were the lifeblood of an air force and saw the problems the A-4 program could create. Cote identified the budget as a primary source of contention between services, and argued that budgetary concerns motivated services to adapt. Between 1925 and 1933, Germany allocated a modest 10 million marks annually for aircraft purchases, but that rapidly increased when it began allocating almost 35 percent of its industrial production capability to war materials.[28] A loss of funding would create a spiral that would have serious repercussions throughout the entire Luftwaffe. Furthermore, having had a long professional relationship with Helmut Wilberg, who was also part Jewish, and General Hans von Seeckt, Milch would have viewed the Army's increase in resources at the expense of the *Luftwaffe* as an insult to his fellow air officers who fiercely fought to retain the integrity of the German Air Force at Versailles.[29]

The Army's development of advanced rocketry also threatened the *Luftwaffe's* role as the service that dominated the air domain. The *Luftwaffe* was incensed by the high profile Army program and according to Speer during a post war-interrogation, its leadership "was disturbed that the Army alone would be bombing London" and had "protested that the Army was sprouting wings."[30] The *Luftwaffe* would have perceived the A-4 as well as the army's encroachment into its roles and missions as a significant threat. According to Cote, when other services encroach upon a perceived area of

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[26] Owen Reid Cote, Jr. "The Politics of Innovative Military Doctrine: The U.S. Navy and Fleet Ballistic Missiles" (PhD diss., The Massachusetts Institute of Technology, 1992), 253.
[27] Cote, "The Politics of Innovative Military Doctrine," 341.
[28] James S. Corum, *The Roots of Blitzkrieg* (Lawrence, KS: University Press of Kansas, 1992), 166.
[29] Brian Spino, "Blinded by Doctrine: Lessons Learned from the *Luftwaffe*," Master's Degree Thesis, Strategy Research Project. Published at Carlisle Barracks, PA, 2009.
[30] David Irving, *The Mare's Nest*, 25.

expertise, tensions will rise and bring about a reaction which leads to an acceleration of the innovation process.[31] After all, how could rockets, which were even more advanced than most of the *Luftwaffe's* aircraft and obviously flew great distances just like an aircraft, not be a part of "Goering's *Luftwaffe*?" Since acquiring the entire rocket program was out of the question, the next best thing was to challenge it with another system.

Milch, in his role as the *Generalluftzeugmeister*, undoubtedly knew that the *Luftwaffe* was decreasing its independent operations and increasing its ground support mission along the Eastern Front in Russia.[32] According to Cote, each service wants to "protect its doctrinal vision of itself as an independent, strategically significant actor."[33] As a leading figure in the early years of the *Luftwaffe*, Milch, who was a long term thinker, organizer, and excellent administrator, as well as essentially "air-minded," was strongly influenced by other nations to ensure that the *Luftwaffe* remained independent.[34] As preparation for rearmament the *Luftwaffe* studied foreign air power concepts, namely those holding sway in the US, UK, and Italy. The RAF and Italian *Regia Aeronautica* were independent and the US Army Air Corps was aspiring to independence.[35] Loss of independence was therefore something to be avoided, and a technologically advanced Fi 103 potentially offered a solution.

The development of the Fi 103 was a gamble because it was developed rapidly during a time of war. Its benefits were unknown, it was costly (although nothing compared to the V-2), and enemy counter-measures had not been adequately considered. Having observed this, Rosen noted the risk involved with wartime innovations: "This type of innovation is strongly characterized by the need to develop strategies for managing

[31] Cote, "The Politics of Innovative Military Doctrine," 47.
[32] Richard Muller, *The German Air War in Russia* (Baltimore: Nautical and Aviation Publishing, 1992), 103. According to the German high command the Luftwaffe was focused on "direct ground support" between 60-80% of the time. As the situation in Barbarossa grew worse for the Germans that percentage increased and then eventually decreased as aircrews and aircraft were in short supply.
[33] Cote, "The Politics of Innovative Military Doctrine," 85.
[34] Bryan Mark Rigg, *Hitler's Jewish Soldiers: The Untold Story of Nazi Racial Laws and Men of Jewish Descent in the German military* (Lawrence, KS: University of Kansas Press, 2002), 178.
[35] Billy Mitchell did not represent the entire mentality of the Army Air Corps during the inter-war period however he professed an independent Air Force in his book *Winged Defense*.

uncertainty."[36] Milch must have known he was assuming great risk when Hitler, after seeing the A-4 rocket at Kummersdorf, was not impressed by the displays and issued his backhanded compliment of "*es war doch gewaltig* –well, it was grand."

The Army increases the tension

The *Luftwaffe's* move to begin the development of the Fi 103 naturally alarmed Dornberger. On 9 October 1942, several months after Milch directed the RLM to fund the A-4 program, Dornberger sent a memorandum to von Braun requesting a status on the *Luftwaffe's* program. Dornberger's memorandum read: "Lately there have been many remarks from government offices, firms, etc that the A-4 program no longer possesses the importance ascribed to it by the people who work on it. In that connection, confidential hints have been made that "Cherry Stone"…is far more valuable and has every chance of catching up and passing the A-4 program, if not making it altogether illusory."[37] Von Braun reassured Dornberger that "the poor accuracy and shorter range of the cruise missile made it less than competitive" with their rocket.[38] Although this mollified Dornberger, von Braun did report that the Fi 103's cost was only a third of the much larger A-4. Later, Dornberger naively expressed disbelief that a sister service could initiate a competing program in complete secrecy while co-located on the same isle. Having been a member of the original team at Peenemünde, Dornberger should not have been surprised by the *Luftwaffe's* attempts to start its own program.

Dornberger was already very alarmed at the state of his own program's resources. Dornberger said that the program was allotted only enough to keep it alive and that their current level of resource allocation "prevented us from living and did not allow us to die."[39] Although the rocket program was already one of the top funded projects in the German military, Dornberger knew that the Fi 103 could potentially reduce the resources the Army received and required for the A-4. This was an astute observation, since the highest echelons in the German military held unfavorable opinions of the rocket program due to its exorbitant cost. Hitler, who was technologically savvy and normally in favor of

[36] Stephen Peter Rosen, *Winning the Next War: Innovation and the Modern Military* (Ithaca, NY: Cornell University Press, 1991), 52.
[37] Neufeld, *The Rocket and Reich*, 167.
[38] Neufeld, *The Rocket and Reich*, 167.
[39] Dornberger, *V-2*, 70.

such innovations, merely viewed the rocket as a long-range artillery shell, but with a huge price tag.

Concerned that the Fi 103 would drain resources from his rocket program, which he assessed as already underfunded, Dornberger argued that the A-4 was a better substitute for the bomber:

> Ever since the huge bomber losses during the attack on England in 1940, my colleagues and I had been firmly convinced that defeat in the air on the western front could be prevented, if at all, only by the employment of guided missiles of very great range and effect. In the long run the *Luftwaffe* would not be able to afford the continued loss of valuable flying crews. A bomber was shot down after an average of five or six flights over England, [sic] if it could carry only a total of six to eight tons of bombs during its active existence, and if the total loss of a bomber, including the cost of training the crew, were estimated at about thirty times the price of an A-4 (38,000 marks), then it was obvious that the A-4 came off best.[40]

Dornberger's assertion that a rocket cost only 38,000 marks was wrong. As the military lead for the program, Dornberger would have had intimate knowledge of the costs. His estimate may have been based on future rockets under full production during peacetime conditions with maximum efficiency; however, the actual price of the rocket was 138,000 marks.[41] Eight rockets were required to equal the explosive tonnage of one bomber, which cost roughly between 245,000 and 300,000 marks. [42] Since the bomber was recoverable and the rocket was not, the bomber was clearly the more cost effective choice.

Dornberger's comments are indicative of an Army officer in the midst of a fierce inter-service rivalry that was trying to ensure the success of an Army program as well as defend the Fatherland. His comments illustrated disdain for the *Luftwaffe* when he suggested that the *Luftwaffe* bombers would always be shot down. Whether Dornberger knew that the cost of one A-4 equaled one hundred V-1s is unknown but he was definitely notified by von Braun that the *Luftwaffe* program was substantially cheaper. [43] His suggestion to replace the bomber with the A-4 was merely an attempt to see his

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[40] Dornberger, *V-2*, 71.
[41] Albert Speer, *Inside the Third Reich* (New York: Simon and Schuster, 1981), 556.
[42] Antony L. Kay and Paul Couper, *Junkers Aircraft and Engines, 1913-1945* (Annapolis, MD: Naval Institute Press, 2004), 178.
[43] Interrogation of German PoWs, A.D.I. (K) Report No 2246, *German Flying Bomb* (no date, typed transcript, 512.6521, in USAF Collection, Historical Research Agency, Maxwell AFB, Alabama, 1.

program succeed. After all, by late 1942 Dornberger and his team had been working on the rocket program for seven years. After the successful October launch Speer drafted a decree for mass production that Hitler signed a week prior to Christmas. Too close for coincidence, the *Luftwaffe* successfully catapulted a Fi 103 only five days later on Christmas Eve.[44]

Throughout 1943, the constant game of back and forth between the services continued as they worked furiously to bring their weapon systems into full production. The year would be full of setbacks and frustrations, which the ferocity of the rivalry did not ease. In fact, the strain on resources and the Luftwaffe's inability to protect the Reich increased the tension. In 1943, many German leaders began to view the war effort as a lost cause.

On 26 May 1943, Peenemünde hosted a side-by-side demonstration and comparison of the A-4 and Fi 103. The crowd that had gathered for the demonstration consisted of many of the most powerful individuals in the Third Reich: Speer, Colonel-General Erich Fromm, Milch, Speer's deputy Karl-Otto Saur, Admiral Karl Donitz, and members of the Long Range Bombardments Commission (LRBC).[45] What they saw was a spectacular performance by the A-4 but failures by the two Fi 103s as both crashed into the Baltic Sea. Slapping Dornberger on the back, Milch exclaimed sarcastically: "Congratulations! Two-nothing in your favor!"[46]

The LRBC decided to produce both weapons following the demonstration, although the A-4 was given the highest production rating ("DE") that any program could attain. Speer's decision to gain approval from Hitler to produce both weapons was political maneuvering. According to Neufeld, Speer wanted to both protect his friendly relationship with Milch and see the rocket produced.[47] Speer's decision to ease some of the rivalry at Peenemünde would prove to be a fatal flaw for the German war effort that exponentially increased the resource requirements as well as the ferocity of the service rivalry. Already irate over the Fi 103's "loss" during the demonstration, Milch became furious when he found that *Luftwaffe* personnel originally assigned to work with the

[44] Irving, *The Mare's Nest*, 26.
[45] There is no evidence that Hitler ever went to Peenemünde during the course of the entire war. Saur was Speers right hand man in the Armaments ministry. Fromm was the Commander of the Reserve Army (*Ersatzheer)*, in charge of training and personnel replacement for the German Army.
[46] Neufeld, *The Rocket and the Reich*, 190.
[47] Neufeld, *The Rocket and the Reich*, 190.

Army for *Wasserfall* had been pulled into A-4 work. Because of the pressure on Dornberger and von Braun to produce operational results, the Army had exploited the initial cooperation between the services to enhance their program.

Acquiring the ability to provide terror

The allied destruction of Hamburg on 27 and 28 July 1943 was an attack that would secure the A-4 and Fi 103 in their roles as "Vengeance Weapons" later in the war. According to one author, the destruction of Hamburg, a city with a population of nearly one million residents in 1943, "shook the Nazi hierarchy to its very core."[48] Up until that point in the war the bombing of Hamburg, named Operation Gomorrah by the RAF and US Eighth Air Force, was the largest aerial assault in the European theater to date and caused thousands of casualties. According to Jörg Friedrich, the allied bombing of Hamburg was a "slow, relentless machine that ground away day and night in all parts of the Reich" to instill terror in the German people and crush their morale to the point of surrender.[49]

The German response to the bombing consisted of shock and outrage, and it motivated some of the senior members of the Third Reich to begin openly discussing plans for retribution. In response to Hamburg, Hitler told his subjects, "You can only smash terror with counter-terror."[50] To Hitler, the attack on Hamburg was not only an attack against a city but an attack against the German *Volkssubstanz*, which is loosely translated as the essence of the German people.[51] Speer alluded to the coming "terror" in a speech in the Ruhr when he stated "even if the German mills of retribution may often seem to grind too slowly, they do grind very fine. . ."[52] Not long after the bombing of Hamburg Hitler announced "Our hour of revenge is nigh! . . . . Even if for the present we cannot reach America, thank God that at least one country is close enough to tackle."[53] However, it

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[48] Keith Lowe, *Inferno: The Fiery Destruction of Hamburg, 1943* (New York: Simon and Schuster, 2007), 215.
[49] Jorg Friedrich, *The Fire: The bombing of Germany, 1940-1945* (New York: Columbia University Press, 2006), 97. The bombing of Hamburg took place over the course of a week during 26 July – 3 August 1943. Although disputed by historians, the death toll in Hamburg over the course of the week is roughly 50,000 deaths.
[50] Irving, *Hitler's War*, 612.
[51] Richard Muller, *The Luftwaffe over Germany* (London: Greenhill Books, 2007), 103.
[52] Irving, *The Mares Nest*, 52.
[53] Williamson Murray, *Strategy for Defeat, The Luftwaffe 1933-1945* (Maxwell AFB, AL: Air University Press, 1983), 250.

was not until a year later that the Fi 103 and A-4 were employed and Goebbels made his famous announcement regarding the *Vergeltungswaffen*.

Milch's "mills of retribution" were also grinding after the destruction of Hamburg: "If we do not succeed in smashing these terror attacks by day and by night very soon, then we must expect a very difficult situation to arise for Germany."[54] Milch was a member of the "defensive clique" that espoused placing an umbrella of fighter aircraft over the Reich, whereas Hitler and Goering advocated a Douhetian approach that called for continual production of bombers.[55] Although Milch retained his advocacy for a *Luftwaffe* defensive posture, he was riled by the bombings and mused that when the Fi 103 were eventually employed they would provide "catastrophic morale effects by itself."[56] Thus, Milch demanded that fighter production be given first priority as well as the reclassification of the Fi 103 as a bomber replacement.[57]

In his book *The Lessons of Terror*, Caleb Carr refers to Hitler's persistence to exact revenge against the British as a part of a "cycle of revenge."[58] Hitler's relentless desire to strike the British people is indicative of the same internal force that drove Vlad Tepes to impale Ottoman forces, his mortal enemy. Indeed, both men inflicted cruel and horrible suffering on their enemies as well as their own people. At face value, Hitler's comments could be easily construed as his empathy towards his people and in actuality he probably felt some sympathy towards the citizens of Hamburg, yet he never visited any of the bombed cities. However, when one delves into the psyche of Hitler they soon learn that he was a man with a keen understanding of the psychological mechanism of terror and realized it was politically effective when it evoked insecurity, fear, and anxiety.[59] Hitler's wielding of terror was especially directed at the Jews which he blamed for much of Germany's problems during the interwar period. Notice the similarities between his

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[54] Irving, *The Rise and Fall of the Luftwaffe*, 256.
[55] Richard Muller, "Losing Air Superiority: A Case Study from the Second World War," Air and Space Power Journal, Winter 2003, 1. Other members of the defensive clique include Adolf Galland and Gen Gunther Korten. Galland was the Luftwaffe Inspector General of Fighters and Korten was the Chief of the Luftwaffe General Staff. The reference to the Douhetian approach to bombing is from Richard Muller, "Strategic Bombing," In *Military Innovation in the Interwar Period* (New York, NY: Cambridge University Press, 1996), 137.
[56] Irving, *Rise and Fall of the Luftwaffe*, 250
[57] Benjamin King and Timothy Kutta, *Impact: The History of Germany's V-weapons in World War II* (New York: De Capo Press, 2003), 98.
[58] Caleb Carr, *The Lessons of Terror* (New York: Random House, 2002), 36.
[59] Robert L. Waite, *The Psychopathic God, Adolph Hitler* (New York: De Capo Press, 1977), 87.

comments regarding Hamburg and his writing In *Mein Kampf*: "I found it difficult to defend my own position, which was that the conflict should not be evaded but that it should be faced openly and that we should be armed with those weapons which are the only protection against brute force. Terror cannot be overcome by the weapons of the mind but only by counter-terror. The success of our first public meeting strengthened my own position. The members felt encouraged to arrange for a second meeting, even on a larger scale."[60]

Indicative of a man filled with hate, rage, and racial intolerance, Hitler's comments illustrate his desire to inflict terror in the name of revenge as opposed to tying the rockets to an operational objective in the war. Speer, who by skillfully accepting a measure of guilt saved his neck during the Nuremburg trials, after the war offered a far more benign position on using the rockets as reprisal or for terror:

> Those who advocate accelerated development of aerial weapons are proceeding on the principle that terror is best answered by terror and that rocket attacks against England will necessarily lead to a decrease in missions flown against the Reich. Even assuming that the large long-distance rockets were available in unlimited quantities, which it so far is not, previous experience suggests that this reasoning is unjustified. On the contrary, those elements in England who formerly opposed the use of terror-bombing against German's civilian population…have been moved, since our rocket attacks, to urge their government to launch massive raids against our densely populated areas.[61]

Speer was one of Hitler's closest friends and is much more likely to have aligned himself with Hitler.[62] In all likelihood, Speer was as acculturated into the Nazi regime as the rest of them, thus his words reflect his attempts to save himself from hanging and are probably not indicative of his actual feelings at the time.

After the bombing of Hamburg, the intensity of the rivalry between the Army and the *Luftwaffe* increased to its highest levels. Each service viewed their *Wunderwaffen* as the panacea that would save the Fatherland. Additionally, both the Fi 103 and A-4 had gained powerful advocates in the highest echelons of the Third Reich. Goering, as head

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[60] Adolf Hitler, *Mein Kampf* Translated by James Murphy (London: Hurst and Blackett, original published in 1925. Fifth edition, 1939), 280. Hitler's comments are a reference to German Labor Party and how they should handle the Jews.
[61] Albert Speer, *Inside The Third Reich* (New York: The Macmillan Company, 1970), 265.
[62] Joachim Fest, *Albert Speer: Conversations with Hitler's Architect*, translated by Patrick Camiller (Cambridge: Polity Press, 2007), 296.

of the *Luftwaffe*, naturally wanted his service to be the first to inflict terror on the British. Never having any talent for procedural processes or an understanding of resource allocation but greedy for revenge, Goering increased one particular order of Fi 103s from 5,000 flying bombs to fifty thousand.[63] On the other hand, Speer was a strong advocate for the Army's rocket program and boasted that they would start their campaign and employ their weapons first. Speer's control over resource allocation would have allowed him to ensure the A-4 succeeded in the "rocket race" had he not valued his personal relationship with Milch.

Speer's continued support for the rocket program through the remaining years of the war caused a major diversion of German production capacity and raw materials from other manufacturing requirements and continually raised the ire of the *Luftwaffe*; they knew their program cost was only a fraction of the rocket program. The allocation of resources to both programs is almost incomprehensible; after the war the USSBS estimated that the industrial effort and resources expended for the production of both the Fi 103 and A-4 was the equivalent of 24,000 fighter aircraft.[64] Although Speer's diversion of resources has often been criticized by WWII scholars for leading to the demise of the *Wehrmacht*, the loss of production facilities from allied bombing would have been unable to process a large percentage of resources had the diversion never took place.

Allied Response to the Innovations at Peenemünde

The population of Peenemünde was not the only ones who knew that separate programs existed during the summer of 1943. Obtained by a dissident German, the "Oslo Report" informed the British government of a "top-secret research establishment…for long-range rockets..."[65] Initially thought to be products of nothing more than imagination of the "Jules Verne variety," the RAF soon learned that the programs were indeed genuine.[66] On 17-18 Aug 1943, the RAF launched Operation Hydra and struck Peenemünde with 2000 tons of bombs killing just over 700 workers and destroying a

[63] David Irving, *Goering: A Biography* (New York, NY: Avon, 1989), 570.
[64] C.R. Williams, *United States Strategic Bombing Survey—Report on the "CROSSBOW" Campaign: The Air Offensive Against V-Weapons, EW #60 (24 September 1945).* Washington, D.C.: U.S. Government Printing Office, 1945, 35.
[65] Phillip Henshall, *Hitler's Rocket Sites* (New York: St. Martin's Press, 1985), 123.
[66] George Saunders, "The Flying Bomb," *Life*, Vol. 17, No. 21 (20 Nov 1944): 90-98, 90.

large portion of the infrastructure. Even the British were aware of the rivalry and held suspicions. Dr. R.V. Jones, a member of the Crossbow committee, opined that the German Air Force was probably developing a pilotless aircraft for long-range bombardment in direct competition with the rocket.[67] It would appear that even the Germans' adversaries knew of the fierce rivalry between the services.

Hydra brought the realities of war home to everyone at Peenemünde. Up until that time the inhabitants had undergone air raids and seen numerous enemy aircraft; however, none had ever directly attacked the facility. The reality of war might have been a greater shock had the members of both services not been assimilated into their service culture and grown closer to one another. Having served as a part of the Army team since before the inception of Peenemünde, von Braun et al had been acculturated into the Army's institutional culture. Anthropologists refer to enculturation as the steady, relentless internalization of a particular set of group norms and ideals.[68] Essentially, the interaction of professional ambition, internal cultural dynamics, and military and political pressure from elsewhere within the Third Reich formed a cohesive team with one desire: to successfully employ the A-4. Thus, although von Braun et al were civilian scientists who had never served in the military, they assumed many of the same values and norms as the military members of the Army rocket program. The same bond that the A-4 team shared later drove Dornberger to rescue von Braun from an SS jail for refusing to support the SS move to take control of the rocket program from the Army.[69]

More important than the relatively small setback in schedules was that Hydra strengthened the bonds of the scientists and the military in both teams. Having personally experienced war for the first time, the scientists were now more deeply committed to constructing the A-4. Similarly, the *Luftwaffe* also coalesced into a tighter group; however, they lost two of their most valuable scientists: Dr. Thiel and Dr. Walther. Even in the midst of the aftermath, inter-service rivalries were still strong.

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[67] Irving, *The Mares Nest*, 114.
[68] C.R. Williams, *United States Strategic Bombing Survey—Report on the "CROSSBOW" Campaign: The Air Offensive Against V-Weapons, EW #60 (24 September 1945).* Washington, D.C.: U.S. Government Printing Office, 1945, 35.
[69] Un-numbered Document, National Archives and Records Administration, Record Group 319-Records of the Army Staff, Security Classified Intelligence and Investigative Documents Personal Dossiers1939-1972, Box 657A- Werner von Braun.

Instead of directing their rancor towards the RAF, the *Luftwaffe* blamed the Army for failing to adhere to proper procedures by not constructing shelters in the housing area.[70]

Although Hydra wreaked havoc on the establishment, it failed to destroy the rocket production facilities, though it did slow the two programs by three months.[71] Most notably, Hydra dispersed production of both weapons to locations elsewhere in France and Germany. Following the RAFs bombing of Peenemünde, production shifted to the underground plant of Mittelwerk at Nordhausen, in the Harz Mountains. Following the location change, the army predicted their first A-4s would roll off the assembly line by January 1944. Goebbels wrote in his diary "young professor Wernher von Braun had boasted that his rocket missiles would turn the tide of war against Britain."[72]

The SS steps in

The change in production locations resulting from Hydra allowed the SS to influence the rocket program. Heinrich Himmler, the SS *Reichsführer,* had been engrossed in the rocket program since seeing a test a year earlier and expressed to Dornberger: "I am extremely interested in your work."[73] In reality, Himmler wanted to control the rocket program and the dispersion of facilities was exactly what he needed to gain this control.

Himmler placed Hans Kammler, one of his strongest and most ruthless subordinate leaders, in charge of A-4 production. Kammler was eager for action, able to exploit developing possibilities, and possessed "that *Staffel* spirit."[74] Ruthlessly exploiting the labor force, Kammler employed the slave labor from the Mittelbau-Dora camp to place

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[70] Irving, *The Mares Nest*, 96.

[71] C.R. Williams, *United States Strategic Bombing Survey—Report on the "CROSSBOW" Campaign: The Air Offensive Against V-Weapons, EW #60 (24 September 1945).* Washington, D.C.: U.S. Government Printing Office, 1945, 5.

[72] David Irving, *Goebbels: Mastermind of the Third Reich* (New York: St. Martin's Press, 1996), 798.

[73] Roger Manvell and Heinrich Fraenkel, *Heinrich Himmler: The Sinister Life of the Head of the SS and Gestapo* (London: Greenhill Books, 2007), 168. Himmler Leader of the SS and Chief of German Police, an architect of the "Final Solution", and one of Hitler's main advisors. Next to Hitler, Himmler emerged as the most powerful man in Nazi Germany. As the war drew to a close, Himmler realized that the Germans would be defeated. He attempted to charm the Allies, while simultaneously continuing the war in the east. He concealed evidence of mass murder, and allowed several hundred camp inmates to be transferred to Sweden, and attempted peace negotiations through Count Folke Bernadotte, head of the Swedish Red Cross, and even suggested surrendering to United States General Dwight D. Eisenhower. This enraged Hitler, who took away all of Himmler's authority. After the Germans surrendered, Himmler tried to escape Germany, but was caught by British soldiers. He committed suicide on May 23, 1945, before he could be brought to trial as a war criminal.

[74] Michael Thad Allen, *The Business of Genocide* (Chapel Hill: University of North Carolina Press, 2002)159. The Staffel spirit is referring to the Schutz Staffel—the SS.

the A-4 into full production. According to Dornberger, Kammler professed his disbelief in the project and described the rocket as a "chimera without prospect of realization," yet he was ironically the one man Himmler charged with A-4 production.[75] With Himmler's installment of Kammler, it was only a matter of time until the SS would fully control the A-4 program. After a futile attempt to assassinate Hitler in July 1944, Himmler gained full control of the rocket program when the entire Army officer corps was placed "permanently in the dog house."[76]

Dornberger and von Braun viewed the rockets as weapons; however, their motivations were based on obligations that arose out of *Beruf* and *Angriffskrieg.* Although both certainly had some personal interest in the rockets, national pride and a sense of duty were the paramount concerns that provided the impetus for their work once the war started.

Himmler, on the other hand, saw the A-4 as a means to increase his power base in the Third Reich. Described by his biographer Roger Manvell as "perpetually militant and power loving," Himmler wanted to control the Third Reich himself.[77] As the head of the SS, an organization Goebbels labeled as "the greatest power organization that one could imagine," Himmler had continually postured himself throughout the war in order to seize control of the Reich.[78] Having already attempted to seize control of the armaments ministry from Speer, gaining control of the rockets was a likely and therefore predictable step, in the direction of becoming Führer.

The Luftwaffe employs the Fi 103

As Himmler increasingly gained control of the Army rocket program, the *Luftwaffe* initiated the second blitz on London with several Fi 103s on 13 June, only one week after the allied landing at Normandy. This proved an inauspicious start at first, as only a small number of the total flying bombs landed in London. Soon afterward, however, the *Luftwaffe* was rapidly launching them and passed the thousand-mark point only ten days

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[75] Dornberger, *V-2*, 211

[76] Un-numbered Document, US National Archives and Records Administration, Record Group 319- Records of the Army Staff, Security Classified Intelligence and Investigative Documents Personal Dossiers1939-1972, Box 657A- Werner von Braun. In the document, von Braun is describing his inability to decline SS membership.

[77] Manvell and Fraenkel, *Heinrich Himmler*, 15.

[78] Manvell and Fraenkel, *Heinrich Himmler*, 218.

after the first weapons were first fired. Milch's efforts to regain the lost prestige of the once mighty *Luftwaffe* appeared to pay off.

Although Goering was a lost cause and sunk deeper into his morphine addiction, Hitler held complete faith in Milch. Even while the *Luftwaffe* continued in a downward spiral Hitler wrote to Milch: "In this war I myself have come to value your presence at times when even a soldier must somehow keep faith at times of tension, crisis, and anxiety."[79] Hitler included Milch in that "select band of men for whom the word 'impossible' did not exist."[80] When Hitler received word of the destruction in London from the Fi 103s, instead of calling Goering who was still in command of the Luftwaffe, Hitler called Milch to congratulate him and said, "It has exceeded our wildest expectations."[81] Incidentally, Goering had reminded Hitler after the Fi 103s inauspicious start that they were Milch's idea. In January of 1945 with the war going very badly for the Germans, the *Luftwaffe* finally lost control of the Fi 103 to the SS after Kammler requested authority over the program from Goering. Upon Goering's approval Kammler appointed himself as the commissioner that was responsible for the "breaking of the air terror."[82] By the very last weeks of the war, at Himmler's suggestion Hitler entrusted all aircraft production to the SS and *Obergruppenfueherer* Kammler.[83]

Operational effectiveness

The total number of Fi 103s fired against all targets was 22,480.[84] Of those, the Germans fired 10,492 Fi 103s against Britain with almost 2,000 of them crashing shortly after takeoff.[85] The British reported observing 7,488 V-1s and shooting down 3,957. In his book, *The Evolution of the Cruise Missile*, Kenneth Werrell provides a wealth of statistics about the effectiveness of RAF countermeasures. Werrell calculated that RAF fighters shot down 1,846 missiles; guns claimed another 1,878; and tethered balloons brought down another 2313.[86] British defenses downed almost seventy percent of the Fi

[79] Irving, *Rise and Fall of the Luftwaffe*, 166
[80] Irving, *Rise and Fall of the Luftwaffe*, 166
[81] Irving, *Rise and Fall of the Luftwaffe*, 320
[82] Neufeld, *The Rocket and the Reich*, 257
[83] Call # 512.6521A, IRIS number 00213404, Original publication date 1945, "V-1 Campaign through German Eyes," US Air Force Historical Research Agency, Maxwell AFB, AL
[84] Dieter Holsken, *V-missiles of the Third Reich*, 248
[85] Rowland F. Pocock, *German Guided Missiles of the Second World War* (New York: Arco Publishing, 1967), 21.
[86] Kenneth P. Werrell, *The Evolution of the Cruise Missile* (Maxwell AFB: Air University Press, 1985), 60.

103s launched during daylight and recorded only a slightly lower percentage at night achieving a sixty-five percent kill rate.[87] Irrespective of the multi-layered British defenses, almost 2,419 Fi 103s still reached London, killing approximately 6,184 civilians and seriously injuring another 17,981.[88] Not long after the war ended, a 1946 document for the Army Air Forces Scientific Advisory Board reported that about 23,000 houses were destroyed with another 1,104,000 damaged.[89]

The Germans also launched anywhere from 7,400 to 9,000 Fi 103s against targets on the European continent; approximately 4,900 at the port of Antwerp, 3,000 at Liege, and only 151 at Brussels.[90] Because of the port's proximity to the German lines and aircraft requirements elsewhere, the same defensive approach used in London was not possible; therefore, fighters were not employed as a counter measure. The number of fighters that would have been dedicated to the effort would have significantly reduced the airpower available elsewhere. Instead, the Allies responded with 208 90mm guns, 128 3.7-inch guns, 188 40mm guns, and 1,400 balloons.[91] Combined, the counter measures provided a relatively effective defensive layer. The allies designated a 7,000-yard radius from the center of the port area and only targeted those weapons appearing in that circle. Approximately 2,759 V-1s threatened the port directly; guns and balloons destroyed 1,766 -- a rate of sixty-four percent. In total, the Germans only hit the port with 211 Fi 103s causing minimal damage to the strategically important asset.[92] V-1s killed approximately 947 military members and 3,736 civilians with another 2000 military and 8,000 civilian injuries throughout the European continent. Antwerp suffered the heaviest casualties because the Allies only targeted those weapons appearing within the 7-Kilometer radius.

The Führer's gratitude to Milch was premature. Even with the extremely high number of weapons launched at London and other locations in Europe, as well as the severe

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[87] Werrell, *The Evolution of the Cruise Missile*, 60.
[88] Pocock, *German Guided Missiles of the Second World War*, 21.
[89] H. L. Dryden, W. H. Pickering, H. S. Tsien, and G.B. Schauber, *A Report Prepared For The AAF Scientific Advisory Group on Guided Missiles and Pilotless Aircraft,* Published by Headquarters Air Materiel Command, Publications Branch, Intelligence, Wright Field, Dayton, Ohio, May 1946, 2.
[90] Headquarters Antwerp, X Forward, Report #2H, 4 March 1945 [AFHRA-539.667-12].
[91] SHAEF, "Air Defence of Targets in Belgium Against Flying Bombs," 14 October 1944, [AFHRA-Film #1 17, Frame 42948].
[92]Report #2J, Annex A; USFET. #38, 40-45; Young, 129. IX Air Defense Command, "Historical and Statistical Summary: 1 January 1944-1 June 1945," 32 [AFSHRC-539.04]

destruction they caused, the Fi 103s failed to produce any operational success. Years after the war ended, Churchill recalled in his memoirs that one of the reasons for the flying bomb's failure was the buzzing sound it produced. Churchill recalled, "The strident engine of the flying bomb warned people to take cover."[93] That the sound of the pulsejet would eventually be a warning never occurred to the Germans albeit the weapons did tie up some RAF airpower over England instead of making it available for deployment on the continent. Another reason for their failure was, in common with several other technologically advanced weapons, their late introduction in the war. Producing over 35,000 Fi 103s, the Germans actually launched less than a third because the allies overran their launching positions as they moved east towards Berlin.[94] Although production and testing difficulties were to blame, if the Luftwaffe employed them several weeks earlier, some claim that the Normandy invasion might have had a different outcome. General Dwight D. Eisenhower remarked, "If the Germans had succeeded in perfecting and using these new weapons six months earlier than they did, the invasion of Europe would have proved exceedingly difficult and perhaps impossible."[95]

With the Fi 103 an operational failure, the *Luftwaffe* resorted to extreme measures. When Himmler took control of the *Volkssturm*, the citizen's militia, late in 1944, Goering tried to regain his prestige and planned to incorporate members of the Hitler Youth into flight training.[96] Fortunately for the youths, the units did very little flying. The *Luftwaffe* even intended to conduct suicide missions but later discarded the idea.[97] It was too late; the damage from Goering's leadership, the combat losses, and the schizophrenic aircraft production directed by Hitler, as well as numerous other factors attributed to six years of war had already taken their toll. The once proud and mighty *Luftwaffe* failed to regain the prestige it once held—something Milch craved badly.

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[93] Winston S. Churchill, *The second World War, Volume VI: Triumph and Tragedy,* (New York: Houghton Mifflin Company, Original printed in 1953, Reprint 1985), 47.
[94] James F. Dunnigan and Albert A. Nofi, *Dirty Little Secrets of World War II* (New York: William Morrow and Company, Inc, 1994), 54.
[95] Irving, *The Mare's Nest*, 15.
[96] Interrogation of German PoWs, A.D.I. (K) Report No 2246, *German Flying Bomb* (no date, typed transcript, 512.6521, in USAF Collection, Historical Research Agency, Maxwell AFB, Alabama, 1.
[97] Interrogation of German PoWs, A.D.I. (K) Report No 2246, *German Flying Bomb* (no date, typed transcript, 512.6521, in USAF Collection, Historical Research Agency, Maxwell AFB, Alabama, 1.

Finally able to overcome technical and production issues, the SS launched its first rocket at Paris on 8 September. Unlike the Fi 103 which could be shot down or knocked off course by tipping its wings, there were no countermeasures effective for stopping a V-2; its sheer speed and vertical trajectory made it unstoppable. Although there are different accounts of the exact number of A-4 rockets fired against England, the 1945 United States Strategic Bombing survey documented that the Germans fired nearly 1,100 V-2s at England from various locations in Europe.[98] According to Winston Churchill, the rockets killed an estimated 2,724 Britons while injuring 6,476 more.[99] Although not in as great numbers, the Germans also fired rockets at Antwerp, Liege, Hasselt, Tournai, Mons, Diest, Norwich, Ipswich, Lille, Tourcoing, Arras, Cambrai, Maastricht, and Remagen. With a much smaller inventory and their poor accuracy, fewer rockets reached their targets than Fi 103s. Unable to produce any operational success, the hugely expensive project failed to fulfill the expectations of those who clamored to control it. Hardly decisive in a war where resources mattered, the A-4 rockets were coveted more by the Americans who realized their potential against a future adversary in the East.

The Germans were unable to learn from their own war experience. They should have realized that the British did not succumb to the blitz during the battle of Britain four years earlier. Furthermore, they should have recognized that they themselves were still fighting fiercely after both the RAF and USAAF razed a long list of German cities. Hindsight being 20/20, the weapons more accurately represented each service's pride. However, that pride blinded them to devote immense resources towards their respective programs at the expense of other potentially more valuable endeavors.

Conclusion

Inter-service rivalry was but one of many problems besetting Germany during the war; however, it was one of the worst. Initially the rivalry concerned whether one service would be out done by the other. When there were signs of cooperation, competition took over. The secrecy of the programs simply polarized the groups further. As the war continued, the Luftwaffe's ability to protect the Fatherland was in jeopardy and

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[98] C.R. Williams, *United States Strategic Bombing Survey—Report on the "CROSSBOW" Campaign: The Air Offensive Against V-Weapons, EW #60 (24 September 1945).* Washington, D.C.: U.S. Government Printing Office, 1945., 2

[99] Winston S. Churchill, *The Second World War, Volume VI: Triumph and Tragedy* (New York: Houghton Mifflin Company, Original printed in 1953, Reprint 1985), 47.

subsequently its prestige declined. The loss of prestige coupled with the perceptions of threats to its roles and missions, reinforced by individual notions of obligation and duty to Germany, created the Fi 103.

The two systems, intended to ensure the security of the fatherland, paradoxically reduced it by draining resources that could have been used elsewhere. Not only were the services in a race for resources but with the continual decline of the Luftwaffe, they were in a race to produce terror. Perhaps it is ironic then that although their hard work paid off and the rocket was employed, it was not the army that launched them, but the SS.

Chapter 5

Summary and Conclusion

Summary

The primary argument of this thesis was that Germany's rocket attacks were the result of an intense inter-service rivalry between the *Luftwaffe* and the Army and not necessarily the deliberate acts of a totalitarian regime that intended to inflict terror. To develop that argument, this thesis first tackled the issue that has the most contemporary resonance, and was perhaps, the most difficult chapter due to the preconceived notions people possess regarding terrorists. The chapter made the point that a substantial degree of subjectivity involves categorizing an event as a terror event. It illustrated that past historical occurrences could be regarded as terror but are frequently not for various reasons. For example, the Zealots are referred to as one of the first terrorist organizations, but there is no mention of Vlad Tepes. Additionally, Chaliand and Conquest referred to the French revolution and the Soviet purges as state or top-down terror, yet Mao killed just as many of his own people and his genocidal actions were deemed the Cultural Revolution and not an incident of terror. This same subjectivity permeated into the US government definitions of terrorism; consequently there is a plethora of different definitions.

The subjectivity of the term terror allows it to flow pejoratively, spurred by political rhetoric. Thus, a state, organization, or individual that possesses conflicting ideologies or goals can be deemed a terrorist. The second point this chapter makes is that the pejorative term terrorism obfuscates that these entities have in fact engaged in war. For example, why is it that Al Qaeda conducts terrorism but the US conducts war? The answer is Al Qaeda conducts terrorism because the US stated that it conduct terrorism and considers Bin Laden and the rest of his ilk as terrorists. Characterizing members of Al Qaeda or any other groups for that matter as soldiers hardly contains the same impact as the term terrorist.

Chapter two laid the theoretical framework for the existence of interservice rivalries and explained why they continue to endure. The chapter first illustrated that rivalries have existed for centuries—one author even suggested for millennia. That interservice rivalries have existed for centuries across different cultures, eras, religions, and technological advances within the military illustrates that they are a part of every military and will continue to hamper cooperation between services. Rivalries endure due to the competitive environment created by the manner in which they are organized as separate services along functional lines; therefore they must compete for resources. But resources are only one source of conflict; organizational identity, service culture, the notion of prestige, and even individual personalities reinforce and strengthen rivalries.

Just as organisms adapt to the environment to ensure their survival, military services must also adapt and adjustments to a service's DOTMLPF are the natural result.[1] Thus, when the German Army began developing the rocket, the entire system began to grow. Ultimately, as the system continued to enlarge it came in contact with *Luftwaffe* DOTMLPF, its own system, and conflict ensued. The chapter ends by pointing out different perspectives and perceptions of an interservice rivalry and illustrating that each service's perspective is unique; thus the perceptions will vary greatly.

The chapter pointed out that an interservice rivalry does not always have negative consequences and can be beneficial because it provides a "healthy tension" between the services. The tension created from the perpetual competition between services forces services to innovate and continually adapt. This tension also can lead to new technologies, which in some instances may create a paradox. The innovation that was developed as a result of the tension could potentially lead to greater conflict and eventually continue the cycle.

Chapter three argued two points. First, two Prussian concepts overwhelmingly influenced the German military culture and permeated all levels of the German military. The first institution is the notion of *Beruf,* which instilled in the German people a powerful sense of obligation and duty to the Fatherland that fostered nationalistic pride. This intangible force was so powerful that it influenced Milch, who was part Jewish, to

[1] DOTMLPF refers to doctrine, organization, training, materiel, leadership and education, personnel, and facilities.

continually fight for the sake of the fatherland, even while Jews by the millions were dying in camps. The great irony is that a workforce consisting of Jewish, as well as many other purported *Untermenschen* from the Dora-Mittelbau camp, provided much of the labor force to construct the A-4 rocket, the primary competitor to the *Luftwaffe*.

The second institution was that of *Angriffsgeist*, the spirit of attack. The rockets themselves were a reflection of the continual pursuit of the offensive as they provided Germany with an ability to strike the enemy at any time or place of its choosing. *Angriffsgeist* also instilled an aggressive spirit in those involved in the Fi 103 and A-4 programs as well as the *Wehrmacht* writ large. Individuals in both service programs were imbued with an aggressiveness that motivated them to continually strive for an advantage against their fellow service whether it was Dornberger's attempt to use the rocket as a replacement for the bomber or Milch's attempt to thwart Army production. However, since aggressiveness was such a powerful force, it also provided Himmler and the SS with the impetus to seize the rocket program.

The chapter also argued that the *Luftwaffe's* loss of prestige was another factor that spurred the rivalry and motivated the *Luftwaffe* to develop the Fi 103. The loss of prestige, albeit not a primary factor, was the result of poor decisions, unpreparedness when the war began, doctrine that primarily supported *Blitzkrieg*, and leaders who were unfamiliar with the technical details of air power. When these factors, which individually would not have had a significant effect, were combined it created a cascade that had an overwhelmingly negative effect on the German Air Force.

Chapter four provided the narrative of the interservice rivalry. It incorporated the previous chapters' framework to depict a highly competitive environment fueled by the notions of *Beruf* and *Angriffsgeist*, the loyalties of senior officers to their services, the role of separate service cultures and identities that shaped perspectives, and the continual loss of prestige by the *Luftwaffe*. All of these powerful influences coalesced during the world's most destructive war to produce weapons considered by some as innovative wonders yet considered by others as devastating weapons that were meant to destroy lives and inflict terror.

Conclusion

The primary argument of this thesis was that Germany's rocket attacks were the result of an intense inter-service rivalry between the *Luftwaffe* and the Army and not necessarily the deliberate acts of a totalitarian regime that intended to inflict terror. The primary argument of this thesis can be rephrased to form three questions. The first question is "were Germany's rockets the product of an intense interservice rivalry?"

The Army clearly did not develop its rocket program as a result of interservice rivalry. When Becker first received permission to begin rocket development in 1929, the *Luftwaffe* did not even exist and Milch had not returned to the Air Force from Lufthansa. Military culture provided a strong sense of nationalism, duty, and obligation to the Fatherland which powerfully influenced the rocket's initial development as a form of security as well as a boost to national prestige once it was completed. Von Braun's assertion that he was dreaming of space during the program's initial years is in all likelihood valid. Dornberger, having previously worked with Becker on the Paris gun, was determined to develop the rocket as a much larger artillery system. Individual motivations stemmed from a thirst for scientific and technical knowledge; a desire to move beyond the atmosphere, an interest in rockets, and a desire to advance mankind.

The development of the Fi 103 is much different. The environment that existed between the Army and *Luftwaffe* was caustic and wrought with distrust, jealousy, and contempt. Although the services possessed a congenial relationship at Peenemünde in the 1930s, it was short-lived and soon dissolved after cooperation failed. From that point on competition between the services was exacerbated by the war, the struggle for resources, individual personalities, service culture, and organizational identity. During the early years of the war the *Luftwaffe* was motivated to maintain its prestige and retain its self-anointed title as the most elite service in the Wehrmacht. In 1942 when the decision to develop the Fi 103 occurred, the *Luftwaffe* perceived that it was threatened by the Army in a number of different ways: loss of independence, roles, missions, resources, and service pride. With Goering's decree that everything that flies should be a part of "his" *Luftwaffe,* the rocket was a legitimate threat even though Dornberger envisioned it as an extension of artillery, a traditional army role.

Although Cologne had recently been bombed, the death toll and destruction was much lighter than other cities later in the war and the allies were not bombing with impunity;

thus it is unlikely that the Fi 103 was initially developed as a reprisal weapon. Furthermore, the destruction of Hamburg did not occur until the middle of 1943, nearly an entire year after Milch held his meeting with Fieseler to lay out the development plans. Most of the discussion by *Luftwaffe* and Third Reich leaders involving the Fi 103 as a terror or reprisal weapon did not occur until much later in the war. Hitler did intend to "revisit" the invasion of England; however, there is little evidence to suggest that the Fi 103 was intended solely for this purpose. Thus, the Fi 103 was not developed purely as a terror weapon, although the idea was most likely ruminating. Clearly there is sufficient evidence to support the assertion that the Fi 103 was developed primarily as a result of the rivalry between services.

The second question is "did Germany intend to inflict terror?" To determine the answer we must first define our terms. When Hitler, Dornberger, and others in the Third Reich referred to the Fi 103 and A-4 as a replacement for the bomber they were referring to terror bombing. Terror bombing and morale bombing are synonymous and both terms refer to the intentional bombing of civilians in order to compel the government to surrender.[2] Coercion theorist Robert Pape opined that terror bombing was incredibly effective for causing widespread destruction and death in civilian societies but it was an ineffective means of achieving military or political objectives.[3] Pape's argument is essentially the same as the *Luftwaffe's* Chief of Staff Walther Wever, who in 1936 rejected the Douhetian argument and deemed morale bombing counterproductive.

However, Hitler changed his thinking and rationalization towards morale bombing during the course of the war. Initially, he and the military did not see the efficacy of morale bombing, which was evident in German Air Force doctrine and during the initial months of the Battle of Britain. During the Battle of Britain, in which the Luftwaffe failed to achieved any of its objectives after several months, there was a fundamental

[2] Other forms of bombing consist of targeting military forces, industrial centers, or the nation's leadership Targeting military forces ranges between Close Air Support (CAS) and interdiction. Robert Pape refers to interdiction as a part of a denial strategy. Targeting industrial centers was advocated by the Air Corps Tactical School as its industrial web theory during the inter-war period. Decapitation strategies were in Chapter one's discussion of terrorism and relate to the targeting of state or military leadership. Risk strategies also exist although not discussed in this thesis. A risk strategy consists of escalating the pain a state can endure until it executes the will of the coercer.

[3] Robert Pape, *Bombing to Win* (Ithaca, NY: Cornell University Press, 1996), 135.

shift in German opinion on morale bombing's efficacy. Richard Overy made the following observation regarding the German transition to morale bombing:

> Though the German Air Force never formally adopted terror bombing, the tactics of widely scattered attacks, the use of a special incendiary squadron to start fires for other bombers to follow, the relaxation of rules of engagement over London on moonless nights, the deliberate decision to target the enemy psychologically by attacking intermittently around the clock, the use of aerial mines and the targeting of administrative areas of the capital, all reveal the gradual abandonment of any pretence that civilians and civilian morale would not become targets.[4]

Up until that point in the battle, the *Luftwaffe* targeted the Royal Air Force and its supporting infrastructure, not civilian areas. Following the Battle of Britain Hitler clearly articulated his desire to inflict substantial harm on the British people and continued bombing England for several more years, albeit on a much smaller scale. Once morale bombing's genie was released from the bottle, the Germans conducted morale bombing until the end of the war, albeit not on the same scale as the allies. By the end of the war Hitler did not possess any objections to using the V-weapons against civilian populations and was determined to "fight terror with terror."

Hitler was not the only leader to change his opinion regarding morale bombing. Milch also had a fundamental shift in thinking although he differed with Hitler on the delivery means. By 1944 Hitler was not concerned with fighter production and decreed that the *Luftwaffe* would only develop aircraft that could carry bombs. Milch resisted Hitler's declaration as much as he could; he knew fighters were the key to defending the Reich. This left the Fi 103 as the sole platform for long range strikes. Spurred by nationalism, Milch adamantly agreed with Hitler that the British population should receive the same terror that allied bombers had delivered to hundreds of German cities. Thus, there is overwhelming evidence to suggest that the Third Reich and the Luftwaffe intended the rockets to be terror weapons.

Von Braun did not specifically articulate that the rockets were intended for terror, but did acknowledge that Germany was at war and he supported the war effort by developing the rockets. He knew exactly what they were intended for but probably chose to place that in the back of his mind. Dornberger's comment that he wished "to pay the English

[4] Richard Overy, *The Battle of Britain* (New York: Norton Publishers, 2000), 109.

back for the terrible sorrow that they have caused" has a more sinister connotation and speaks directly to the weapons as reprisal weapons.[5] Although not as clearly articulated as Hitler and Milch, Dornberger was clearly in favor of employing the rocket to cause terror.

The third question is "Did the Germans inflict terror?" Intentions and actual behavior are drastically different. Hitler intended to drive the British to the point of surrender with his "strategic attacks" against London. Additionally, as illustrated previously in chapter four, not every target was within the purview of morale bombing. Striking targets such as Antwerp clearly were intended for operational purposes such as preventing the use of the deep water port, an important logistical hub for the allies. Hitler soon realized, however, that the weapons did not provide the results he wanted either operationally or strategically, yet the attacks continued. The sheer numbers fired as the war neared its end raises an interesting question regarding the employment of the V-weapons late in the war. Once the Germans realized that the weapons were ineffective against strategic and operational targets, did they continue to inflict terror simply for terror's sake? In other words, did Hitler continue to use the rockets as a means to an end or did terror become the end?

There is some evidence to suggest that when the Germans realized that the war was unwinnable, they continued to fire the Fi 103 and A-4 merely to inflict damage on the Allies. First, consider the name of the weapons provided by Goebbels, *Vergeltungswaffen.* The name alone suggests German reprisals intended to terrorize the British population by inflicting a great degree of pain and suffering. Indeed, this is what Dornberger most likely meant when he stated he intended to repay the English for the sorrow they caused. Intended to punish the other party, reprisals satisfy an emotional need but they do not yield any additional benefit towards achieving military objectives. The allied bombing of German cities for the duration of the war would have provided a powerful motivation to punish the British and the destruction of Dresden in February of 1945 would have only reinforced it.

Furthermore, the German leadership would have known that morale bombing was ineffective during the Battle of Britain. Therefore, they would not have placed much

[5] Michael B. Petersen, *Missiles for the Fatherland* (Oxford, England: Oxford University Press, 2009), 101.

faith in the rockets to achieve any strategic effects. If they did rely on morale bombing to effectively change the course of the war, it did not last for very long even though they fired thousands of Fi 103s and A-4s at London. One wonders what the Germans hoped to achieve by firing the A-4 at London after thousands of Fi 103s were unable to break the will of the British populations during the preceding months. Clearly there was no objective in mind and the Germans merely intended to inflict as much pain and suffering as they could on the populations.

Whether the Germans intended to inflict terror for terror's sake as a reprisal weapon or intended to use the Fi 103 and A-4 as a means of morale bombing is extremely difficult to determine. Different targets, nearly a ten month span of time, and de-centralized execution by the SS all contribute to different interpretations whether the weapons were linked to an objective or were simply for the sake of terror. Thus, subjectivity determines whether the rockets were merely a part of war, terror weapons, or terrorism. That, after all, is the point.

Appendix 1

Fi-103 Technical Data

Commonly referred to as the V-1, the actual nomenclature assigned to the weapon was the Fi 103 flying bomb—the "Fi" was short for the Fieseler company, the primary designer. Similar in design and shape to modern era cruise missiles, the Fi 103 contained a much smaller warhead. At only 1,870 pounds, its destructive capability was far less than a typical cruise missile of either the US Navy or US Air Force today. Often called Flying Bombs and Robot Bombs; the British also referred to them as Doodle Bugs and Buzz Bombs due to the buzzing noise emanating from their engines. Easily heard when in flight, the Fi-103 was much harder to locate when stationary on the ground. Painted in pattern of greens and light blues, their camouflage effectively concealed them amongst the ground cover during allied campaigns against them. [6]

Constructed primarily of steel, although later models had plywood wings on a tubular metal spar to increase their range by reducing the weight, a pulsejet engine powered the Fi-103. Each one was twenty-five feet in length, had a wingspan of 19 feet, and weighed over two tons. Although smaller than a manned aircraft, the weapons had a range of roughly 130 miles and could fly at speeds of 435mph—sufficient to strike London from the French coast. When aloft, their maximum altitude was 10,000 feet but most flew at only several thousand feet. The RAF later exploited the lower altitudes with effective countermeasures. [7]

The front of the weapon contained an aluminum-alloy fairing, which housed a small propeller for determining range and inside the weapon were two wire-wound compressed air spheres for the pneumatic control servos. Unlike other weapons of the day, the Fi-103 was not radio-controlled but had a pre-set guidance system. The system included a

[6] Technical information provided by the Smithsonian National Air and Space Museum. For more information please see V-1 in the Space Race exhibition or visit online at http://www.nasm.si.edu/collections.

[7] Technical information provided by the Smithsonian National Air and Space Museum. For more information please see V-1 in the Space Race exhibition or visit online at http://www.nasm.si.edu/collections

magnetic compass monitoring an automatic pilot that contained a displacement gyro and two rate gyros for stability. A rudder prevented it from rolling since there were no ailerons on the wings. An aneroid pre-set in millibars of atmospheric pressure controlled the altitude. When the propeller made a set number of revolutions, a counter fired a detonator in the tail that locked the elevator in a neutral position, cut off rudder control, and deployed two hinged spoilers from the underside of the weapon, causing the missile to a dive onto its target.[8]

The Luftwaffe normally launched the weapon from a firing tube mounted on an inclined metal ramp 150 to 180 feet long by 16 feet high that acted as a type of catapult. Pressurized gas caused a piston on the ramp to thrust forward, hurling the missile into the air. Once the missile had attained an initial operational speed of 200-mph, the pulsejet engine activated. At times, the Fi-103 was also air-launched by a modified Heinkel He 111 aircraft carrying the weapons below the fuselage of the aircraft.[9] The following picture depicts a German Fi-103:

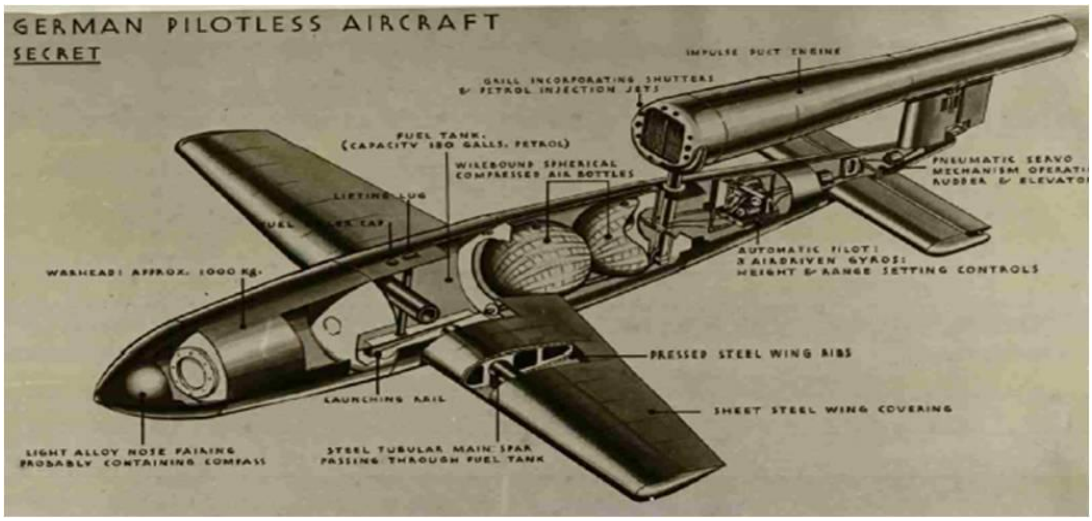

Figure 4: German Fi 103 (V-1)
Source: Report No 2246, *The German Flying Bomb* (no date, typed transcript, 512.6521, in USAF Collection, Historical Research Agency, Maxwell AFB, Alabama, 1.

A-4 Technical Data

Known to the world as the V-2, the Germans referred to the rocket as the A-4. The "A" was the German word *Aggregat* ("unit" or "device"), the "4" represented the fourth

[8] Information provided by the Smithsonian National Air and Space Museum
[9] Information provided by the Smithsonian National Air and Space Museum

series of rocket, and the "2" in V-2 denoted that the rocket was the second vengeance weapon launched against England. Constructed of thin sheet steel around a wooden framework, the rocket was almost four stories high. Carrying a smaller warhead than the Fi-103, the nose cap was a fuse for detonating the 1,650 lb explosive upon impact. The instruments for guidance, control, radio, and electrical systems were underneath the warhead. The center of the rocket consisted of two half shells containing the propellant and fuel tanks and the tail section contained the motor, turbo pump, steam-generator, and associated plumbing. The motor, comprising the combustion chamber and nozzle, was made of steel, while the pumps consisted of steel and an aluminum-silicon alloy.[10] When fully loaded with fuel, the A-4 weighed close to 28,000 lbs.

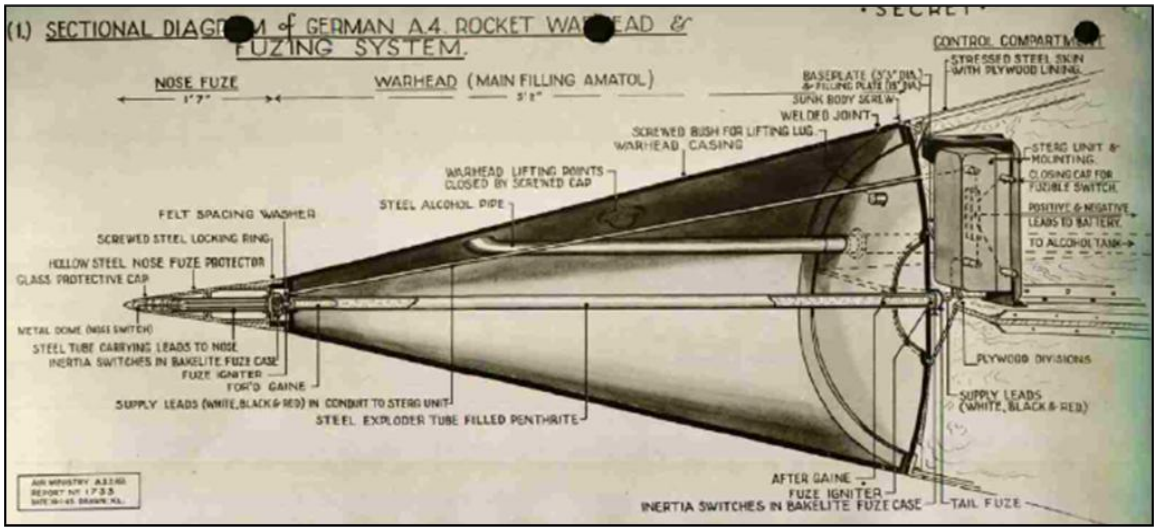

Figure 5: German A-4 (V-2) Nosecone
Source: Report No 2246, *The German Flying Bomb* (no date, typed transcript, 512.6521, in USAF Collection, Historical Research Agency, Maxwell AFB, Alabama.

The A-4 evolved from secret tests conducted between 1932 and 1934 by the German Army at the Army's Kummersdorf artillery range, south of Berlin. In 1934, a smaller version of the A-4 successfully flew from Borkum Island in the North Sea, albeit the launch was not as spectacular as the much larger A-4. These tests were later followed by a much larger version designed and built between 1935 and 1937. Proposed in 1935 as a projected 25 metric-ton thrust rocket, the A-4 was a larger version of the previous

[10] Technical information provided by the Smithsonian National Air and Space Museum. For more information please see V-1 in the Space Race exhibition or visit online at http://www.nasm.si.edu/collections

rockets.[11] The following picture is a de-classified drawing of an A-4 that the allies produced during the war:

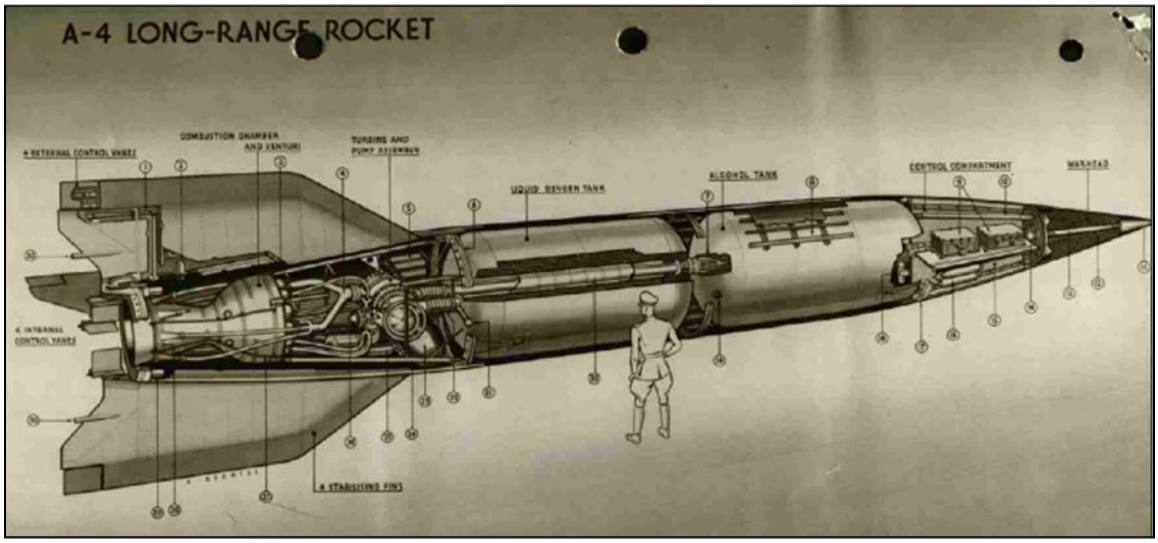

Figure 4: German A-4 rocket
Source: Report No 2246, *The German Flying Bomb* (no date, typed transcript, 512.6521, in USAF Collection, Historical Research Agency, Maxwell AFB, Alabama.

[11] Technical information provided by the Smithsonian National Air and Space Museum. For more information please see V-1 in the Space Race exhibition or visit online at http://www.nasm.si.edu/collections

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